The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, No. 6 CHICAGO, ILLINOIS AUGUST 7, 1920

THE FUTURE OF THE PHYSICIAN*

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NEW YORK

Must we not provide good physicians for the state; and must not these be such as have been conversant with great numbers both of healthy and sick people?—*Plato's Republic.*

Psychology teaches us that the essential function of the mind is its dealing with the future. Life is one long anticipation, preparation for what is to come, preoccupation with tomorrow. Of course, there could be no outlook without experience. The faculty of anticipation is based on the store of memories: as the searchlight depends on electromotive force or the cantilever bridge reaches out ahead in direct proportion to the materials gathered and joined together behind, so the subject of this particular anticipation of the future of the physician is based on an experience of forty years in the practice of medicine. If the cantilever bridge is a good analogy, I ought to be able to project my anticipations forward, then, at least some forty years.

Most physicians of this generation and of all previous generations have busied themselves with diagnosis and therapy; and, of course, among the oldest generations of physicians therapy was the chief study and occupation, because knowledge of the changes in the body produced by disease and of accurate methods of diagnosis are all very recent in the history of medicine. They did not really know very much even about therapeutics in the old days, but they could and did prescribe. Theirs were not exactly shotgun prescriptions—they were more like shrapnel. A famous and favorite prescription for many centuries was the theriaca of Andromachus. It has attained immortality, together with its prescribers and its victims. Andromachus of Crete invented it. Nero promulgated it by order. I will not take time to name its sixty-one components—but in later centuries it was improved in the Codex of the Faculty of Medicine of Paris by the addition of eleven more ingredients—one of these the flesh of the viper—so that in the end the Favorite Prescription was compounded of seventy-two assorted medicaments.

I'm not so sure that we should laugh at this prescription. We might smile a little, with diffidence, with an eye on the future, for our posterity will probably find much to amuse them in our own therapeutic inventions, methods and agents. I wonder what they will say of some of our surgical procedures, our endocrine adventures, our psychanalysis, eye-muscle cutting, removal of submerged tonsils and turbinated bones, teeth-pulling—these therapeutic epidemics among physicians of our day?

No, we must not be amused at the past. We must rather remember that out of all the facts, errors, follies, mistakes, theories, absurdities, assertions, denials, experiments, failures, of these thousands of years our Tree of Knowledge has risen. These were the gropings of a myriad rootlets in the dark for food and drink and strength of hold. Out of this soil our Ygdrasil has grown.

Therapeutics is the oldest department of medicine. I have no doubt there were practitioners of therapy among the Aurignacians 25,000 years ago. It is, indeed, an ancient and venerable art. It is also the chief interest of the patient today. He does not go to the physician for diagnosis especially, but for relief, for cure, and his demands are in the words of the old Latin therapeutic formula, "Curare cito, tuto et jucunde," to cure quickly, safely and pleasantly. So therapy has had to be thus far the main practical occupation of the physician. To rationalize and improve his therapy he has studied disease, the alterations in the tissue made by disease, the symptoms of the disease, the causes so far as they could be learned, and the infinity of means and methods of diagnosis. And all this material has become so complicated and vast that the medical student of today must needs be an "invincible athlete" to compass it.

Take, for instance, this little fragment of what is required of a medical student today in one of our leading American colleges. It is a syllabus which I find reproduced in Sir James Mackenzie's book on "The Future of Medicine," a book, by the way, which should be read thoughtfully and carefully by every student and physician, and to which I shall refer again later. This is a prospectus of what a student should acquire during his first year of clinical work in the way of technic in special and instrumental methods of examination. It is too long to quote, but I have been strongly tempted to shorten it, to dramatize or put it in the form of vers libre, to make a sort of Whitmanesque poem of it, and it is reproduced herewith. It would have pleased Walt Whitman.

Sir James Mackenzie thus comments on this syllabus:

> These are the "subjects recommended in one school for the student's study during three half-day exercises per week for six months. When it is understood that even the specialists who employ these methods have only an imperfect knowledge of the meaning of the signs which their method brings to light, the practical benefit to the student can be inferred. I need not dwell on the state of the student's mind at the end of a six months' course of this kind of instruction, especially when this subject is probably but one of several others pursued in the same spirit."

* Read before the Alpha Omega Alpha Fraternity, Syracuse, N. Y., April 13, 1920.

Sir James is concerned with the effects on the *student* of this wandering in a maze of technic and mechanical systems.

My own query is, what does the *patient* get out of it—the patient who comes to the practitioner for help and relief from suffering? Would the patient who ran the gantlet of all this formidable array of diagnostic mechanisms (and survived the diagnosis) be in the end really any better off, or as well off, as if he trusted himself to some good old-fashioned sensible country doctor?

I met a patient who had had most of these tests tried on him, and he said the experience was most impressive. I asked him what the doctor had done for him as a result of these labors. He said: "He gave me rhubarb and soda, and when I told him that was just what my doctor in Skaneateles had given me long ago, he said it was not rationalized, not scientific. Then I said rationalized rhubard was having a wonderful cathartic effect on my pocket book."

There is no doubt that ultimate good will result from all this effort at scientific precision. It is the road of progress. But this work is still mostly for the seekers after truth, the research men of our institutes and laboratories; and the medical student and practitioner should not be so overwhelmed with mechanics and half truths that they lose the power of close clinical observation, the power of giving every possible relief to the sick people out in the world who are their care.

We have a vast accumulation of knowledge concerning the third and fourth stages of disease, i. e., of the pathologic tissue changes found at necropsy and of the coordination of such findings with the clinical manifestations of the third advanced stage with its active structural changes. Now the chief aim in the practice of medicine, to cure the patient, has been almost forgotten in our intense devotion to the pathologic changes in tissues and to methods of diagnosis of disease in its advanced stage when usually irremediable damage to the tissues has already been done.

He points out that we have magnificently equipped institutions for the study of disease after the patient has died, and great hospitals for patients suffering from the advanced stages of disease presided over by staffs of skilled, trained and experienced physicians; but few or no attempts are made to train men to detect disease when there is hope of cure.

His plea is that we should now study and understand the first and second stages: that there are signs and symptoms which we shall some day be able to discover, obscure and indefinite though they may seem to us now; that we should devote ourselves to observation of the predisposing and early or curable stages of disease.

It is evident that patients in these early stages do not come under the observation of laboratory or hospital physicians, but, if vaguely uneasy about themselves, go to the family physician for advice. It is therefore in the hands of the general practitioner to make this new and highly important study of the earliest symptoms. These earliest symptoms are mainly subjective, and it is for general practitioners everywhere to intensify their clinical observations of these cases just passing over the borderline between well-being and disease.

This to me is the main thesis of this book, and the idea is developed with much suggestive detail.

I believe that our immediate opportunity lies in a general, widespread, careful and exhaustive examination of the earliest signs and symptoms. This entails a new significance to the study of subjective manifestations, and the development of new means and methods.

Before passing to another part of my subject I want to make my position clear in regard to all these modern mechanical innovations in the practice of medicine. What I oppose is their too ready acceptance and

PROSPECTUS FOR A FIRST YEAR OF CLINICAL MEDICINE

(After Walt Whitman)

O Neophyte in medicine
In thy first year
Acquire roentgenoscopy,
And roentgenography
And be fascinated
By the simplicity of teleroentgenography
As applied to head, thorax, abdomen
And all the bones and members;
In the clinical laboratory.
Learn microscopy and chemistry;
In the bacteriological laboratory.
Learn to collect materials,
Diagnosticate by lens and culture,
By inoculation of animals,
By virulence tests.
Seize the doctrines of immunology
And study agglutinins, bacteriolysins
Hemolysins, precipitins, opsonins and ergins.
Emphasize Widal and Wassermann
Schick and tuberculin.
Next absorb rhinoscopy,
Pharyngoscopy, laryngoscopy,
Paranasal transillumination,
Demonstrate the bronchoscope
And puncture the pleura.
Learn speedily sphygmography,
Cardiography, phonocardiography,
Electrocardiography, tonometry
And sphygmomanometry,
And upon these superimpose
Clinical angiological methodology.
Do not neglect odontology,
Paradental infection,
Pyorrhea alveolaris,
The cognoscibility
Of roentgenograms,
Of dental films,
And if possible oesophagoscopy.
Fail not to practice gastric intubation
With test and contrast meals
And contrast enemas
With proper serial survey
By roentgenography.
It takes but little time
To know the pancreas
By service of the duodenal pump
And secretory analyses.
Whence we proceed to proctoscopy
And rectosigmoidoscopy
And urogenital methodology,
With urethroscopy, cystoscopy,
Ureteral catheterization
And pyelography.
Grow competent in neurology
By accurate tests, cutaneous,
Deep, gustatory, olfactory,
Acoustic, vestibular, visual,
Motor, reflex, coordinative,
Tests of the speech and writing,
Sphincters, and trophic functions,
Adding to this anthropometry,
Lumbar puncture, electrodiagnosis,
And nervous architectonics.
Pay attention to consciousness
Of the patient as a whole,
Not forgetting attention,
Perception, identification,
Diction, feelings, moods.
Emotions and conative functions
Judged by behavior and conduct.
Then learn how indispensable
For diagnosis and therapy
Are studies of metabolism.
Seize the doctrine of balances;
Make preliminary tests
Of assimilation, digestion, absorption,
Then determine the metabolism
Of proteins, nucleins, purins,
Carbohydrates, fats, water,
Mineral substances and vitamins,
And learn direct and indirect calorimetry.
These are only preliminary to the study
Of several amino-acid diatheses
Of diabetes mellitus and gout.
Thus prepared, O Neophyte, finally approach
The endocrine glands
By pharmacodynamics,
Tests with epinephrin, atropin, pilocarpin,
Till endocrinopathies are laid bare.
These simple points are but an item
For first year students who recite 'em.
Next year add more—ad infinitum!

FOUR STAGES OF DISEASE

Now to turn again to Sir James' book, I want to call attention briefly to the most important thesis there set forth:

In the first place, he points out that disease may be said to progress through four stages:

A predisposing stage in which the individual is still free from disease but inherently weak or vulnerable.

The early or curable stage, when the disease has not produced any perceptible alteration of tissue and the symptoms are mainly subjective.

The advanced stage, when the disease has progressed so far as to cause destruction or modification of tissue and when its presence is revealed by physical signs.

The final stage, when the patient dies and the tissues are subjected to a postmortem examination.

adoption by practitioners all over the land before their real value has been thoroughly and finally demonstrated. No one can gainsay the importance of the pursuit of these methods by experts in research laboratories and hospitals; but their exploitation in private practice before their real value or the significance of their findings has been conclusively ascertained is harmful to the profession and, incidentally, sometimes to the patient.

For example, a patient rushed into my office not long ago with an armful of electrocardiograms. They had cost him $300, and he was frightened to death. They were exquisitely done and beautifully mounted, and there were enough of them for a frieze in a refectory. He had a simple neurasthenia with the palpitations so common in that disorder. There was no heart disease, and the pictures were formidable, unnecessary and expensive. It took some little time to cure him of a cardiac hypochondriasis. But it is not alone such elaborate machinery as this that is liable to misinterpretation by both physician and patient; even so simple and widely used an instrument as blood pressure apparatus has, I fear, proved misleading to many physicians and a source of much alarm and hypochondriasis to innumerable patients—not perhaps in the hands of experts, but in the hands of their less experienced imitators all over the country.

HEALTH INSTRUCTION IN PUBLIC SCHOOLS

Now let me invite your attention to a still more important and fruitful field in the future work of the physician. The quotation from Plato at the beginning of this paper suggests that the physicians provided by the republic should be such as have been conversant with great numbers both of healthy and sick people. It is the healthy people whom we are now called on to consider. We physicians have been so busy studying the seats and causes of disease, diagnosis, pathology and therapeutics that we have almost forgotten the healthy people. Yet it seems to me that the physician of the future must make health and healthy citizens his chief concern. There are two factors which have militated against our heretofore taking health into consideration: First, we have been and are too busy with relief repairs and consolation among our clientele to pay much attention to the healthy people about us. Second, the healthy people, engrossed in their own objective affairs, slap themselves on the chest, and feel that the world is their oyster and that they can afford to laugh at fate and the doctors. There are two serious but not insurmountable conditions. I believe that the healthy people and the physicians can be brought together for a common purpose, namely, the reconstruction of the race.

The span of life in this country is about sixty years, and for a century or so we have had in our minds the extension of this average life span beyond the sixty years. But these sixty years are not sixty health years; just sixty years of living, full of more or less ill health and physical decrepitude. The "health span" of life, as Dr. Eugene Fisk calls it, is a much more important matter than the length of life. That "health span" is just about ten years. When the robust, healthy citizens referred to learn the fact that no matter how long they live they are certain of only ten years of exuberant well-being, they are going to stop a moment in the rush of things and take thought. They are going to insist on physicians lengthening that health span, and as soon as the physicians also learn this fact, which few now know, they too will turn their attention to the healthy people and do their part to extend the health span of the race. The ailments that impair health are mostly minor and remediable, forerunners, perhaps, but not the serious disorders from which people die.

I hate to recite statistics, but I must refer to the oft-quoted rejection of more than one third of the flower of our race between the ages of 21 and 31 in the army draft—nearly a million unfit for service—and among those accepted several hundred thousands in the camps found to have "physical defects ranging from syphilis and gonorrhea to flat-foot."

The British, taking in the men of 40 years, rejected 69 per cent. as unfit for military service.

More than 16,000,000 children of our 22,000,000 now in the public schools have physical defects, most of them preventable and remediable, such as heart and lung diseases, disorders of sight and hearing, diseased adenoids and tonsils, flat feet, weak spines imperfect teeth and malnutrition, and among them 1 per cent. of mental defect. I mention these facts first to show how much work there is to be done by physicians among the supposedly healthy members of any community, and secondly to point out the most promising way in which the problem of health may be made evident to the whole people.

We all know how disappointing and almost futile have been our efforts to rouse the people in the matter of public health—the millions expended, our health exhibits, our health lectures, our clean-up campaigns, our pamphleteering—all these expenditures of money and energy have merely scratched the surface. The foremost public health worker in America told me one day that our tuberculosis campaigns in certain states have accomplished practically nothing, and that in one state where nothing whatever had been done there was as much improvement in tuberculosis statistics as in states where campaigners had done their best work.

The point is that we cannot by these methods make clear the matter of public health to the conservative, reactionary, more or less fossilized minds of the grown-ups. We must reach the whole people in the matter of health through the plastic, receptive minds of the children in the schools.

We need but ten minutes daily of health instruction in our schools. It should be a thorough system of instruction in all matters pertaining to health, with special emphasis on health problems rather than on disease, in physical and mental habits, in personal hygiene, in public health and sanitation, in methods to avoid communicable diseases, in the responsibilities of parenthood, and in all that relates to nutrition and growth, including foods and food values and food habits.

These facts reach the growing child, become a part of him, and affect his whole attitude toward life. Moreover, he takes them home and applies them to his younger brothers and sisters, the children of preschool age; and, best of all, he teaches his parents these facts and their importance, and parents will take and absorb ideas from their children to which otherwise presented they would be impervious.

The physician of the future is to be a Master of Public Health. He will push and help instruction in health in the public schools. The healthy people will flock to him. He will fortify the weak against the

onslaught of disease. He will recognize the earliest subjective signs of inroads of disorder and learn to defend his patients from its further encroachment. His mission will be to lengthen the health span of life.

A FIVE OR SIX YEAR COURSE IN MEDICINE

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It is generally recognized that the curriculum of the present four year course in medicine is so crowded that expansion of certain courses, to facilitate more thorough instruction and the inclusion of recent advances in the medical sciences, is almost impossible. A saving of time could possibly be gained by more coordinated teaching to avoid repetition of instruction in the same subject or subjects in different departments; but even under these conditions it is exceedingly difficult to introduce new subjects to meet the ever increasing demands of a liberal education in modern medicine.

For example, the medical student of today should receive more practical instruction in biologic chemistry, immunology and advanced bacteriology, medical zoology, medical drawing, preventive medicine and medical sociology, than afforded by the majority of medical schools at present; also, more recitations conducted by the professors for the purpose of review and coordination; more time and opportunity for conducting laboratory work in connection with the clinical branches and for clinicopathologic conferences, and increased opportunities for elective study and original research in the last year of the course.

The majority of medical schools in this country now require that the student of medicine shall have completed a standard four year high school course of study, or its equivalent, plus two years of work in an approved college of arts and science including courses in French or German and in English, physics, chemistry and general biology or zoology, with appropriate laboratory work. Some of these schools contemplate raising these requirements to include four years of collegiate work and a bachelor's degree in arts or science.

Instead of demanding these two extra years of college work, I believe that medical education will be better served by keeping the entrance requirements at the present minimum and extending the course in medicine one year, or two years if the medical school can guarantee a hospital internship for its students so that the degree in medicine is conferred after the successful completion of at least one year's residence in an approved hospital.

If a collegiate degree is demanded for admission to a medical school, the student spends eight years in college after graduation from high school before he or she is prepared for the practice of medicine, and nine years, if one year of hospital residentship is taken; with the foregoing plan the whole time required, including a year's hospital internship, is eight years. Furthermore, the student devotes the extra year or two to study in a medical atmosphere, and I believe that the better opportunities afforded for the teaching of the medical sciences will give the student as good an opportunity for developing mental capacity and cultivation as is afforded by the third and fourth years in a college of arts and science. For example, a reading knowledge of French or German is usually required for admission; with an extension of the medical course, time is permitted for the teaching of what may be called "medical French or German" during the first and second years, requiring the students to develop sufficiently in these languages to read medicine in one or both with fair success, which is far from being true of the average student under present conditions.

By reason of the added facilities for teaching the medical sciences, I believe that all students successfully finishing the first two years' course in medicine should receive the degree Bachelor of Science or Bachelor of Medical Science (B.Med.Sc.); the degree of Doctor of Medicine should be conferred after the successful completion of the entire course of five or six years.

A FIVE YEAR CURRICULUM

As previously stated, the added year will permit the extension of certain courses and the inclusion of others; a curriculum as follows could be worked out by the majority of schools, a year embracing thirty-two weeks of from thirty-eight to forty hours a week, and divided into semesters or trimesters as necessary:

FIRST YEAR

Anatomy, including histology, embryology, osteology, syndesmology, topographic anatomy and neuro-anatomy.
Physiology.
Toxicology.
Medical drawing.
Illustrated lectures in the history of medicine.
Study hours, with special reference to French and German literature with the aid of instructors.

SECOND YEAR

Pharmacology, including materia medica and pharmacy.
Physiologic and biologic chemistry
General pathology.
General bacteriology and medical zoology.
Hygiene and preventive medicine.
Medical drawing.
Study hours, with special reference to collateral reading in German and French with the aid of instructors.

THIRD YEAR

Special bacteriology and immunology.
Special pathology (neurosurgical-gynecologic pathology) and clinicopathologic conferences.
Clinical pathology and microscopy.
Applied anatomy.
Physical diagnosis.
Medicine, including practical and applied therapeutics and dietetics; medical sociology.
Surgery.
Obstetrics.
Roentgenology and electrotherapeutics.

FOURTH YEAR

Medicine, including pediatrics, neurology, medical psychology and mental diseases.
Surgery, including orthopedic and genito-urinary surgery.
Gynecology.
Obstetrics.
Ophthalmology, otology, rhinology and laryngology.
Dermatology and syphilology.
Clinicopathologic conferences
Lectures in medical jurisprudence and medical ethics.

FIFTH YEAR

Medicine obligatory with associated laboratory work in bacteriology, chemistry, immunity and clinical pathology.
Surgery obligatory with associated laboratory work on concrete cases.

Clinicopathologic conferences obligatory.

Electives and research in any of the branches given in the first four years, each student being obliged to select a minimum amount of work.

COMMENT

The first four years would give a liberal and comprehensive course in medicine, including instruction in the specialties. The added fifth year will afford more time for developing dispensary teaching, including sociological medicine and for more laboratory work in connection with the clinical branches, as so clearly emphasized by Dr. Vincent.[1] The fifth year, by providing ample opportunity for elective studies, will also enable the student to concentrate on one or more clinical or laboratory branches and engage in original investigations under certain conditions to better advantage than at present, without sacrificing the principal aim of the medical school to give a broad and comprehensive course of instruction before the student is permitted to begin specialization.

I do not wish to convey the impression of being opposed to a complete collegiate education preliminary to entering on the study of medicine; indeed, this is far from being the case. But the time has come when schools must seriously consider the extension of the course in medicine, and to do this without greatly increasing the expense and time required, I believe it is better to keep the entrance requirements as they are at present in Class A schools, extend the course in medicine for at least one year and reward the extra time devoted to the study of medicine with the degree Bachelor of Medical Science at the completion of the first two years' course, and the degree Doctor of Medicine, after the completion of the last three years. If the medical school is so situated that the graduate can be guaranteed a year's residentship in an approved hospital, preferably with a mixed or rotating service, this extra and valuable year may be demanded for the degree of Doctor of Medicine, although I do not believe that the majority of schools are in position to adopt this requirement at the present time.

1. Vincent, G. E.: Ideals and Their Function in Medical Education, J. A. M. A. 74: 1065-1068 (April 17) 1920.

TEACHING THE PATHOLOGY OF FUNCTION

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If the position of pathology in the medical curriculum today were to be described diagrammatically, it might be stated that it occupies the neck of an hour-glass. The students receive in the earlier years their conception of fundamental sciences, and as the sand concentrates toward the neck of the hour-glass so are the methods of these fundamental sciences concentrated in the study of pathology, the student later branching out in the clinical divisions to apply to the diagnosis of disease the methods and conceptions acquired in his preceding work. In further elaboration it may be stated that the student learns in his first and second years of study the special methods of anatomy, histology, biochemistry and physiology. He is then prepared to enter on the study of those changes from the normal which constitute the natural history of disease.

Gay[1] has concisely said that "'pathology' is still used to mean morbid anatomy rather than the natural history of disease." Fortunately for medicine, however, this conception is gradually being discarded and the term more broadly applied to the alterations of form and of function which go to produce the manifestations of disease. Henderson[2] has stated that "a man trained by necropsy and microscope is inevitably a morphologist." Medicine does not suffer from having morphologists among her devotees unless those morphologists are devoid of a sense of proportion and possessed of minds incapable of appreciating the phenomena of function.

I wish to express the profound conviction that just as the science of medicine depends on a comprehensive understanding of anatomy in order properly to interpret function, so does the pathology of function find its basis in pathology of form. This is not to be interpreted as an indication that alteration of function and alteration of form are parallel, an idea readily controverted in almost any clinical pathologic conference. To teach pathology without a systematic course of instruction in pathologic morphology would be as absurd as attempting to teach medicine without the study of anatomy. It may very well be that the fields of investigation in pathologic anatomy are not at the present time of such great promise of early and fruitful results as the fields of pathologic function; but this does not by any means excuse the teacher of pathology from omitting morphology as the basis in teaching work.

Recognizing the broad scope of pathology as it was conceived by Virchow, we come to a realization of the fact that in the same sense as anatomy is not the science of medicine, so is pathologic anatomy not the science of pathology. In agreement with Ophuls,[3] I must emphasize that "a thorough understanding of the biologic processes of health and disease cannot be reached by one method alone." In order to convey to students of medicine the proper conception of pathology, we must recognize that pathology in itself is not a science in the same sense that medicine itself is not a science. Pathology constitutes a mélange of scientific methods, and adopts for its own purposes not only the methods of the premedical sciences, but those of the more fundamental pure sciences as well. Pathology, without physics and without mathematics, is on an extremely insecure basis. Few there are who take exception to this point of view as regards investigation in pathology; but many still hold to the view that teaching this subject should be confined to morphologic methods. The latter fail to recognize that the student of today is the investigator of tomorrow, whether he directs his attention to the practice of medicine or to a life devoted to investigation of disease from a more fundamental point of view. The so-called seclusion of the laboratory often leads one to forget that the living patient as he appears for diagnosis represents a problem in investigation.

The pathology of Rokitansky was pathologic anatomy, but, inspired by the stimulus of Virchow and particularly that of Cohnheim, pathology took over the method of physiology and chemistry. With the epochal work of Pasteur, pathology adopted the

1. Gay, F. P.: The Infectious Diseases as a Field of Investigation in Pathology, J. A. M. A. 67: 1263 (Oct. 28) 1916.
2. Henderson, Yandell: Clinical Physiology—An Opportunity and a Duty, J. A. M. A. 57: 857 (Sept. 9) 1911.
3. Ophuls, William: Anatomic Structure and Function, J. A. M. A. 63: 521 (Aug. 15) 1914.

methods of bacteriology, parasitology and immunology. As time has gone on, a certain amount of specialization in these various fields has become apparent; but this fact does not exclude the teacher of pathology from being familiar with at least the fundamentals of these methods of examining disease. The pathologist who ignores any of these methods is remiss in his duties to his students and his school.

If, in the curriculums of most of our medical schools, pathologic anatomy and histology and also bacteriology are given very definite places and allotments of time, there has been, nevertheless, a regrettable neglect of pathologic physiology and chemistry, as well as immunology, in the required work of the student. The widespread application of physiology and chemistry in internal medicine, the important utilization of immunologic methods in the diagnosis and treatment of disease, make it essential that the properly trained student must have had work in these divisions as a required part of his training in medicine. The student who graduates without training in at least the fundamentals of these subjects is not sufficiently equipped to practice his profession. Leaving to chance the possibility that these topics will be touched on in the courses of medicine and surgery is an injustice to students and to the institution. Providing for instruction simply by permitting students to take electives in these subjects is almost equally unjust. The curriculum that places in a group of electives subjects of fundamental importance is neither well balanced nor properly conceived. That this principle will not be conceded by thoughtful teachers seems unbelievable. This being granted, there remain the problems of time and place. There is no lack of agreement that the medical curriculum at present is overcrowded; but this fact cannot be accepted as an excuse for omitting from the course of study those fundamentals that are necessary. I am in agreement with those who believe that in order to accommodate the necessary subjects, the curriculum must make room at both ends of the present four-year course of study. This means that the colleges must accept some of the burden of premedical work which is now included in the four-year course, and also necessitates adoption of a fifth year into which may be placed some of the clinical work included in the third and fourth years of the medical course. The growth of medical science necessitates procedures of this sort. In this way lies success of medical education; in any other way lies failure.

The place in which pathology of function is to be taught cannot be single; it must be multiple. If the preclinical subjects are to be taught as a part of technical education in medicine rather than as abstract science, it is necessary that there shall be brought to the attention of the students certain variations from the normal which constitute part of the process of disease. The clinic concerns itself largely with manifestations of disease, or, in other words, with pathologic physiology in the broadest sense, from which are interpreted not only the outlines of treatment but also the diagnosis of disease. The disease is manifested in a group of functional disturbances which may or may not be dependent on demonstrable morbid anatomic alteration of an organ or group of organs. The question then arises as to how far one is justified in taking into the course in pathology a consideration of the alterations that accompany the changes of form. There is little doubt that the pathology of the dead, so far as it concerns the great bulk of medical students, is a study of death and not of life. The ideal of teachers of pathology is to make the subject an exposition of the causes, processes and results of disease. Therefore any method that brings clearly to the mind of the student the fact that he is studying, in pathologic anatomy, only the end-results of disease is of the utmost pedagogic importance. That these methods include only those of experiments on animals is entirely erroneous, for a proper correlation with clinical branches makes it possible for the clinician and pathologist to cooperate at least in certain exercises, so as to emphasize the fact that the lesion studied is similar to that found in the living patient.

The teacher who can attain this ideal can well afford to sacrifice some details of pathologic anatomy or pathologic histology, for his larger object is to aid in the training of physicians, and not simply the production of students with a facile, though evanescent, knowledge of pathologic morphology. The advantage of including studies of function in the course in pathology is twofold, in that such a procedure makes the subject a living subject and at the same time is of great value in the development of a well-trained graduate. I am by no means insistent that the course in pathology should include the list of experiments published by my distunguished teacher, R. M. Pearce,[4] in spite of the fact that I am firmly convinced that all these experiments have an important bearing on the subject. The student learns more by doing than by seeing others do and, accordingly, it would seem more desirable to have a large number of students do a small number of experiments in which all can partake, than to have a small number of students do a large number of experiments and demonstrate to the remaining members of the class. It must be conceded, however, that there is an irreducible minimum of essential experimental procedures, and the individual teacher must accommodate his facilities and training to the number of students in his classes. If, however, the student is limited to observation on animals he is likely to lose sight of the application to human medicine, in spite of the most earnest direction of his teachers. Therefore a certain amount of clinical correlation[5] should be attempted. As an example, one might say that listening to a heart murmur produced artificially in a dog would have relatively little significance unless the student is able also to listen to a murmur in a living patient. Correspondingly, the study of alteration of secretory effectiveness of the kidney in an artificially produced nephritis is of little value unless the student can be shown the same sort of test as applied to human cases of nephritis.

As concerns general pathology, more particularly the phenomena of inflammation, the mere fact that bacterial infection may produce certain types of inflammation is insufficient unless there is correlated with this the development of immune processes. I shall not discuss in extenso the position of immunology in the medical curriculum, that is whether it should be taught in the division of pathology or in the division of bacteriology. That it should be a part of the medical curriculum as a required subject is

4. Pearce, R. M.: The Teaching of Experimental Pathology and Pathological Physiology to Large Classes, Bull. Johns Hopkins Hosp. 22: 249, 1911. Karsner, H. T.: The Function of the Experimental Method in the Course in Pathology, Boston M. & S. J. 167: 511, 1912.

5. Karsner, H. T.: The Experimental Method as Utilized in the Clinico-Pathological Conference, Boston M. & S. J. 170: 723, 1914.

indicated by action taken on the part of certain of our medical schools in the recent past. Furthermore, the study of inflammation and infectious disease as a part of general pathology is fruitless unless the immunologic phases are considered and at all times supported by experimental study.

The institution of special departments of experimental medicine or of research medicine does not in any way absolve the teacher of pathology from pedagogic methods of the broadest scope or from bringing to the attention of his students, from the experimental point of view and from the clinical aspects, the living nature of his subject.

CONCLUSION

Let me express again the firm conviction that pathologic morphology is the fundamental basis of this subject from the teacher's and investigator's point of view, but that this method alone is not sufficient to meet the demands of modern medical education and investigation. Time for the study of pathology of function in the course in pathology should be found, even if it involves some sacrifice of detail in the study of morphology. The place for teaching pathology of function is in every department of the medical school. It may be emphasized in one department or another as local conditions necessitate, but if it be omitted in any department, that department is not fulfilling its proper duties toward the training of students, the advancement of medical education, and the forwarding of the investigation of disease.

A PLAN FOR A GRADUATE COURSE IN PEDIATRICS FOR GENERAL PRACTITIONERS

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The department of pediatrics which offers instruction to graduates should be prepared to give courses of five different types in order to meet the needs of various classes of students. These five types should be planned as follows:

1. For general practitioners who wish to improve their general knowledge of pediatrics and to become acquainted with the recent advances in the subject.
2. For general practitioners or recent graduates who wish to become specialists in pediatrics, but not teachers or investigators.
3. For those who wish to become teachers and investigators as well as specialists in pediatrics.
4. For general practitioners living in the vicinity who wish to familiarize themselves with pediatrics.
5. For specialists in pediatrics who wish to undertake special investigations.

I shall consider, however, only the first type of course, that intended for general practitioners who wish to improve their knowledge of pediatrics and familiarize themselves with the recent advances in the subject. Such a course should be continuous throughout the year and so arranged that physicians can enter it or leave it at any time. In this way only can it properly meet the needs of general practitioners, who are not always able to leave their work at a definite time and remain away for a fixed period, as is necessary if a course is given only during a part of the year and is of fixed duration. It is of great advantage to them to be able to begin their work the day that they arrive and to continue it up to the time that they have to leave. They should, however, be made to understand that it is far wiser for them to take the course for at least a month, and better, for three months. The course should occupy the whole of every day and should be so arranged that it may be taken for a part of the day only or all day for part of the days, if desired. Such an arrangement allows physicians to divide their time between pediatrics and some other subject or subjects, if they wish. It may be argued that a physician who takes the course for only a week or two, or for half a day for a few weeks, will not learn much about pediatrics. This is unquestionably true; but if he attends but one exercise and learns but one new point at that exercise, he is better off than he would be if he had not taken that one exercise. For my part, I can see no reason why we should not try to teach a man a little, simply because we do not have an opportunity to teach him much.

TABLE 1.—ARRANGEMENT FOR A COURSE OF LECTURES

1. Diphtheria.	20. Acid intoxication.
2. Exanthems.	21. Diseases of the blood.
3. Exanthems.	22. Congenital heart disease.
4. Infant feeding—metabolism.	23. Acquired heart disease.
5. Breast feeding.	24. Bronchitis and bronchopneumonia.
6. Artificial feeding — general principles.	25. Pneumonia and empyema.
7. Calculations in home modification.	26. Diseases of thymus and status lymphaticus.
8. Indigestion in infancy.	27. Diseases of the kidney.
9. Indigestion in infancy.	28. Pyelitis and enuresis.
10. Infectious diarrhea.	29. Tuberculosis in infancy.
11. Other diseases of digestive tract.	30. Tuberculosis in childhood.
12. Feeding of older children.	31. Congenital syphilis.
13. Premature infants.	32. Infantile paralysis.
14. Congenital malformations.	33. Cerebral paralysis.
15. Diseases of the new-born.	34. Feeblemindedness.
16 Diseases of the new-born	35. Meningitis.
17. Scurvy.	36. Infant mortality.
18. Rickets.	37. Infant welfare.
19. Spasmophilia.	38. Infant welfare.

The work of a course of this sort must necessarily be largely clinical. It should be given partly in the wards of the hospitals and partly in outpatient departments, in order that the physician may see both ambulatory and bed patients, because, if only one type is seen, the range of diseases covered is limited and the instruction is onesided. Special attention should be paid in this clinical work to the newer developments in pediatrics about which the general practitioners are not likely to be well informed. Special opportunities should also be provided for instruction in the details of physical examination for those who are weak in it. This clinical instruction must, of necessity, be rather unsystematic, because it must depend, of course, on the patients who happen to be in the wards or come to the outpatient departments at the given time.

It is important, therefore, to have a systematic course of lectures given as a part of the work. This course of lectures should be so arranged as to cover all the more important subjects in pediatrics. This can be done in three months, if the lectures are given three times a week; in six weeks, if the lectures are given daily. Another course should be begun as soon as one is finished, so that the lectures may go on continuously. A student can, therefore, if he stays six weeks or three months, as the case may be, get the

whole course, no matter when he begins. A reasonable arrangement for such a course is given in Table 1.

These lectures should not be of the same type as those given to undergraduates. It should be taken for granted that the graduates are familiar with the rudiments of the subjects. These should be passed over quickly, therefore, and the chief stress laid on details, the newer developments in our knowledge, and new methods of treatment.

Most general practitioners are out of practice in laboratory work or are unfamiliar with the newer methods, especially as applied to pediatrics. Provision should, therefore, be made for instruction in the ordinary clinical laboratory methods. This should cover at any rate the examination of the blood, urine, stools and cerebrospinal fluid. One afternoon a week is sufficient to do this superficially, but two are better. Instruction in the technic of more complicated procedures, such as the Wassermann test and the examination of the blood for sugar and nitrogen, can hardly be given in a course of this sort. If graduates wish instruction in laboratory methods of this kind, they should get it in some of the other courses.

TABLE 2.—SCHEDULE FOR MARCH

MORNINGS:

Monday:
9 a. m., Massachusetts General Hospital, Dr. Talbot and Assistants.
12 m., lecture, Harvard Medical School, Building A, Room 208.

Tuesday:
9 a. m., Children's Hospital, Dr. Morse and assistants.
12 m., lecture, Harvard Medical School, Building A, Room 208.

Wednesday:
9 a. m., Infants' Hospital, Dr. Dunn and assistants.
12 m., lecture, Harvard Medical School, Building A, Room 208.

Thursday:
9 a. m., Boston Dispensary, Dr. Ladd and assistants.
11 a. m., clinic, Infants' Hospital, Dr. Dunn.

Friday:
9 a. m., Infants' Hospital, Dr. Dunn and assistants.
12:30 p. m., clinic, Children's Hospital, Dr. Morse.

Saturday:
9 a. m., Children's Hospital, Dr. Morse and assistants.

AFTERNOONS:

Monday:
3-5 p. m., Boston Dispensary, Dr. Ladd and assistants.

Tuesday:
3-5 p. m., contagious department, Boston City Hospital, Dr. Place.

Wednesday:
March 3, 3-5 p. m., Children's Heart Hospital, Dr. Eustis.
March 10, Walker-Gordon Farm, Dr Sylvester
March 17, 3-5 p. m., Baby Hygiene Association Clinic, 70 Emerald Street, Dr. Young.
March 24, 3-5 p. m., Children's Heart Hospital, Dr. Eustis.
March 31, 3-5 p. m., Baby Hygiene Association Clinic, 70 Emerald Street, Dr. Young.

Thursday:
3-5 p. m., Massachusetts General Hospital, Dr. Talbot and assistants.

Friday:
3-5 p. m., Laboratory, Harvard Medical School, Building C-II, Room 393, Drs. Grover, Hill, Percy and Wyman.

The physicians taking such a course should also be given an opportunity, as a part of the course, to see something of the workings of a good social service department and of infant welfare clinics or milk stations. They should, in addition, not only be encouraged to read, but also told what to read. It is advisable to have a list of the best and most recent literature on each subject prepared and placed at the disposal of the students. Incidentally, the student should be given a schedule, showing in detail just what the exercises are each day and where they are held; otherwise he is almost certain to go astray. The schedule given in Table 2 is illustrative of a month's work in such a course, as given at the Harvard Medical School.

It is comparatively easy to plan a course of this sort; it is another matter to make it a success. It cannot be a success unless all the instructors are interested and enthusiastic. They must be willing to put as much time and energy into it when there are only two or three students as when there are ten times that number. They must always have in mind how much they can give to the students, not how much they can get out of it. Such a course cannot be a success unless the head of the department and the older instructors do a considerable part of the teaching. It will almost certainly be a failure if the teaching is left entirely to the younger members of the department. They should, however, be given their share of the work, as in this way they get an opportunity to lecture and do more advanced teaching than they ordinarily do with the undergraduates. Finally, if such a course is to be successful, every one in the teaching staff must be prepared to do his best gladly and enthusiastically at every exercise, realizing that the more of himself he puts into his teaching, the more the students will get out of it.

70 Bay State Road.

HOW THE PEDIATRIC TEACHING OF NUTRITION MAY AFFECT THE NATION'S WELFARE *

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NEW YORK

In the management of early life, nutrition forms the most important factor, and the building-up process naturally depends on proper food. Any serious mistakes made at this time soon show their effects and are difficult of compensation. Growth is to be stressed in addition to repair and heat production, and, as the two latter elements need only to be considered in adult life, the child stands in a nutritional class by himself.

It is a truism to state that proper nourishment forms the foundation of satisfactory growth and enduring health.

The pediatrician is often consulted by the general practitioner in obscure or difficult cases, and he determines what shall be taught mothers concerning nutrition during the period of most active growth, when the physical foundations of the entire population are being laid. Therefore, pediatric teaching of nutrition plays an important part in national affairs, although this may not be generally recognized.

The importance of this subject has been emphasized by observations during the recent war period. The large number of young men rejected by the draft for physical reasons, averaging one in four, at once attracted attention. Various investigations have also shown an alarming amount of malnutrition among schoolchildren. During 1917 and 1918, the health department of New York estimated that about 20 per cent. of the children in the public schools were suffering from malnutrition. This condition is not always limited to the poor, but is found to a certain extent among all classes. It is thus due to a failure in the proper selection and preparation of food materials, in addition to pov-

* Read before the Section on Diseases of Children at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

erty. The question naturally suggests itself as to how much of physical defectiveness and malnutrition is the result of teaching faulty theories of nutrition. This subject has at last gotten away from theory and is being based on experiment. It is now possible to consider the various theories of infant feeding in the light of knowledge obtained by animal experimentation.

The literature of infant feeding during the last twenty-five years has been based principally on divergent theories of pediatric authorities. For a long time the steady gain in weight by an infant was considered a demonstration that its food was satisfactory, but many animal experiments have shown that poor growth and rapid gain in weight may go together, and that some individuals who are of satisfactory weight may really be stunted. The important thing is to see that gain in weight is the result of real growth and not of simply storing water and fat in the tissues. Failure to distinguish between gain in weight and true growth, therefore, may result in poor physical development and malnutrition among children as well as in domestic animals. From the standpoint of the infant, insistance on breast feeding, as stressed by Sedgwick and others, will give the best nutritional start. If not entirely sufficient, complemental feeding will enable the breast to continue its work. The principal mistake has been in neglecting the breast and in holding wrong theories on artificial feeding.

A few years ago it was taught that food should be selected according to its chemical composition, as all foods were composed of proteins, fats, carbohydrates, mineral matter and water, in varying proportions.[1] The suitability of a food thus depended on the quantity of these elements present, and artificial feeding consisted in accurately changing and controlling the quantities of these component food substances. Much effort and money were expended on chemical analyses of foods and milks. But if these efforts were desirable in such direction, they did not go far enough. Today it is known that there are many kinds of proteins—the term protein as formerly used having been discontinued; likewise, many forms of fats, carbohydrates and mineral matter. Some forms of proteins will produce growth while others will not; some that will cause growth are more efficient in this respect than other forms. Not all fats are alike in properties or nutritive value, nor are all carbohydrates. It is easy to see how much malnutrition might result from selecting foods on the basis of their chemical composition alone.

At another time a great deal of discussion took place over the supposed necessity of adding alkali to cow's milk in feeding infants to make it have the same reaction as human milk. It has been widely taught that from 20 to 40 grains of sodium bicarbonate should be added to from 4 to 12 ounces of cow's milk. This was then diluted and heated to pasteurize or sterilize the milk in order to make it suitable for infants. The heating changes the sodium bicarbonate into sodium carbonate, which is very alkaline. This was poor chemistry, for the amount added was far in excess of the quantity which would be needed to neutralize the acidity of the milk even if it were sour. The real effect was to neutralize the acid of the stomach and throw the milk in a fluid condition into the intestine for digestion. There may be times when this procedure will be useful, but it must be intelligently employed with the knowledge of what is aimed at and accomplished thereby.

Since the discovery of the so-called "fat soluble A" and "water soluble B" of milk and their relation to deficiency diseases, the routine addition of alkalis to milk acquires a new interest. To quote McCollum,[2] "the work of a number of investigators has shown that 'Water soluble B'. . . is readily destroyed when an excess of such weak alkalis as soda are added to food." The necessity or advisability of adding soda to milk for infants has been diligently taught to mothers all over the country, and it appears that this practice must be eradicated if milk is to have its full nutritive and physiologic value. This is a striking example of a good food being weakened in nutritive value as a result of pediatricians following an incorrect theory.

A later and popular teaching has been that foods were of value in proportion to the amount of heat they yielded on combustion, this amount being expressed in calories. The animal experiments showing the differences in nutritive value of the various kinds of proteins, fats, carbohydrates and mineral matters have made clear the inadequacy of this method of valuing foods, even if it were not known that much nutrition does not depend on combustion. Under this method very improper foods have been advocated and there can be no doubt as to its responsibility for much bad feeding, showing itself in malnutrition, especially in infants and children during the period of growth. I have recently called special attention to the fallacies involved in the caloric system of food valuation.[3] It is thus evident that much of the theoretical pediatric teaching of nutrition has not been such as to promote the most efficient feeding or the best utilization of admittedly good food. There have been those who for many years have persistently advised the use of cereals with milk as the best form of feeding for infants and children, basing their beliefs largely on the practical results obtained. The cereals were used with the milk not only for their nutritive value, but for physically adapting cow's milk to the digestive tract of the infant, which is quite unlike that of the calf for which cow's milk is produced in nature.

The only objection raised to this teaching was that it did not conform to what was claimed to be theoretically correct. As the theories have been found to be incorrect, the proper basis for judgment rests with the nutritional results obtained by the various methods that have been proposed. It has been found that milk makes cereals more efficient in producing growth, and cereals make milk more suitable for infants from the diluent standpoint.

One of the effects of food not being in a physical form that is natural to the digestive tract has been experimentally shown by McCollum and Pitz. Guinea-pigs died of scurvy on a diet of milk and oats that did not fit their digestive tracts, but the addition of inert matter which prevented the food becoming too solid in the digestive tract caused recovery from the disease. "The peculiar anatomic structure of the alimentary tract of the guinea-pig makes it difficult to thrive unless its diet contains a succulent vegetable which gives the feces favorable physical characters

1. Chapin, H. D.: The Limitations of Chemistry in Infant Feeding, New York M. J., April 23, 1904.

2. McCollum, E. V.: Newer Knowledge of Nutrition, New York, the Macmillan Company, 1918.

3. Chapin, H. D.: Do Calories Measure the Value of Food? J. A. M. A. 73:1911 (Dec. 27) 1919.

and makes them easy of elimination." Many years ago I showed that the proteins of various milks have a developmental function as well as a nutritive value. Hardness or softness of the curds depends on the kind of digestive tract they are designed by nature to serve and develop.[4]

The practical advantages of cereals with milk as food have recently been demonstrated on a large scale. During the late war, Denmark was subjected to a blockade and the people had to be strictly rationed. According to Hindhede,[5] beef was so costly that only the rich could afford to buy it in sufficient amounts; therefore, to quote, "reliance was placed on our potatoes and the large barley crop, which was given to man and not to pigs as heretofore, with the results that the pigs died of starvation, but the people received sufficient nutrition. . . . The principal food was bread made of whole rye, plus wheat bran and 24 per cent of barley meal, barley porridge, potatoes, greens, milk and some butter. People entered no complaint and there were no digestive disturbances." Sugar was not mentioned, as this is not a necessary article of food and has only been widely used for a comparatively short time. Various sugars that are frequently consumed in excess are not always necessary and are sometimes harmful. It is only during the last three centuries that sugars have been used at all as foods. They are not infrequently the cause of faulty metabolism. Cases have been recorded in which hyperglycemia has been found with little or no glycosuria.[6]

During the year of severe regulation in Denmark the death rate dropped 34 per cent, being 10.4 per thousand. Hindhede says: "It would seem, then, that the principal cause of death lies in food and drink. The people must first have bread, potatoes and cabbage in sufficient quantity, and then some milk. If Central Europe had adopted this plan there would have been no starvation or malnutrition. It seems to me that the German scientists, as represented by Rubner, have not learned anything from the war."

It will be found that practically all experiments in nutrition, whether conducted on animals or on human beings, show the most efficient foods to be cereals supplemented by milk and green vegetables. This is contrary to the common belief that meat, from its similarity to human flesh, is more suitable for conversion into bodily tissue than vegetable protein. It should be remembered that meat is not absorbed as such but is broken down into amino-acids, which are then recombined to make the specific body tissues that are peculiar to each species of animal. The real test for proteins rests in their supplying the requisite kinds of amino-acid, not whether they are of animal or vegetable origin.

One of the most active causes of social unrest and discontent is the high cost of living, and this high cost is largely due to false theories of what is really needed for proper nutrition. One way to lessen this high cost is to diminish the use of animal food and depend more on milk, cereals and vegetables. Proteins, carbohydrates, and even to a certain extent fats, can thus be satisfactorily administered. As food transformers and producers, animals are very expensive. To show the efficiency of various food-producing animals as food transformers, that is, to show what proportion of the food they eat becomes available as human food, Jordan[7] has reduced to a basis of dry weight the intake of digestible nutrients and the output of materials suitable for human food, as follows:

> From 100 pounds dry nutrients: Cows produce 18 pounds milk solids, 9.4 pounds cheese solids, 5.44 pounds butter; steers produce from 2.5 to 3.5 pounds meat solids; sheep and lambs produce 2.6 pounds meat solids; pigs produce 15.6 pounds meat solids; calves produce 8.1 pounds meat solids; fowls produce 4.2 pounds meat solids and 5.1 pounds egg solids.

Hopkins states that "1,000 bushels of grain has at least five times as much food value and will support five times as many people as will the meat and milk that can be produced from it." Meat can never be cheap unless animals can be fed rough materials that would otherwise be wasted, and dairy products cannot be cheap with labor and feed both high. When meat is used, the cheaper cuts, if properly selected and prepared, will serve as well as the most expensive portions.

In countries where population is dense, as in Japan and China, meat and milk are not used to any extent because the food needed to produce them can be used to better advantage by the people, and land is so thoroughly cultivated that there is little or no rough, nonutilizable human food material that could be used to advantage by animals. Zavitz of the Ontario Agricultural College, in an intensive study covering three years, found that in the case of a steer, for each pound of meat as sold by the butcher there was required about 3.9 pounds of milk, 5.9 pounds of concentrates, 7.7 pounds of hay and 20.5 pounds of succulent feed. These data exemplify the fact, already noted, that animals are highly expensive as food transformers.

Pediatricians can render the nation no greater service than to start the feeding of infants and children with foods that will be efficient economically as well as physiologically. Habits and tastes formed in early years have much to do with food customs lasting all through life, and children should be taught to live on simple, nutritious and inexpensive foods. This should form part of their education. The palate must be educated as well as the brain.

An amusing incident of how opinions change at different epochs on the food question, because of habit, is cited in the following quotation from J. Russell Smith:[8]

> There is a pitiful tale of woe in the State Archives of Maryland, where it has rested since it was sent up to the Royal Governor about 1680, by the inhabitants of one of the islands on Chesapeake Bay. They petitioned that he should send them from the royal bounty some food, for they were about to starve. They went on to rehearse that their crops had failed and that they had been forced to such extremities by the approach of starvation that they had been compelled to go down to the bay, dig up oysters out of the muddy waters and eat them.

As the food that is craved, or considered best, is that for which a taste has early been created, it is peculiarly within the province of the pediatrician to influence national food habits. Food costs can often be reduced and better nutrition obtained at the same time. As an example, one of the future sources of

4. Chapin, H. D.: Principles of Infant Feeding as Based on the Evolution of Mammals, Arch. Pediat., July, 1903; Biology as the Basis of Infant Feeding, New York M. J., Nov. 27, 1909; The Function of Milk in the Scheme of Evolution, Scient. Month., January, 1916.
5. Hindhede, M.: The Effect of Food Restriction During War on Mortality in Copenhagen, J. A. M. A. 74:381 (Feb. 7) 1920.
6. Chapin, H. D., and Myers, V. C.: Chemical Examination of the Blood in Children, Am. J. Dis. Child. 18:355 (Dec.) 1919.
7. Jordan, W. H.: The Feeding of Animals.
8. Smith, J. R.: The World's Food Resources.

protein and fat, as a possible substitute for meat and milk, will be soy beans, which contain twice as much protein and fat as meat. Soy bean gruel flour contains 44 per cent. protein, 20 per cent. fat, 10 per cent. sucrose, 4.3 per cent. ash, 2 per cent fiber and 4.6 per cent. water.[9] It has been used successfully in feeding diabetics and also in nourishing infants when cow's milk is not well tolerated. By combining this flour with other cereals we may produce a fairly balanced diet that may be administered in the form of bread, breakfast porridge, soups, biscuits and even cake. All possible food sources of the world should be searched by scientists to find other food supplies that will be at the same time nutritious and economical. This is one of the most fruitful fields wherein a physician can be of service to the state in trying to allay one of the greatest sources of social unrest. Finally, trial, experience and results, rather than mere theory, must prove the final test of the utility of any plan of nutrition.

ABSTRACT OF DISCUSSION

DR. JOHN FOOTE, Washington, D. C.: Dr. Chapin emphasized the necessity for active interest by this Section in the education of the lay public. He says that one out of every four men examined was found to be physically defective. The U. S. Public Health Service says that one out of every three men examined was found to have some physical defect. When we remember the large number examined, and realize that at least a million men were suffering from physical defects which curtailed their working and earning capacity, we can appreciate what this means economically to the United States. Sir Arthur Newsholme, the great English authority on public health, said a short time ago that they found a similar condition of affairs in England, and that it confirmed a belief they had long entertained, that the function of child welfare work in the education of the public was something that should be vested in the local or national health department, in order that it might be enforced. They found that in England were a great number of persons for whom they could do nothing, because they were suffering from diseases which ought to have been corrected when they were children—perhaps, in the case of some of them, before they were born, by proper education of the mother. That is the condition existing here now. If we are to do anything about it, it is properly a function of the physician, and particularly of those interested in diseases of children. What would we think of a corporation that had no cost accounting system and yet boasted about the great amount of business it did? We have really no cost accounting system in the United States, in respect to infant mortality; in many of the states of the Union no attempt is made to register births; and in some states where birth registration prevails, very little help is given local medical men to enforce it.

DR. LEWIS W. HILL, Boston: The general impression prevailing among medical men, as well as among the laity, is that children need a great deal of protein food, in order to thrive and grow. I do not feel sure that this is true, or that our old standard of 2 gm. of protein per kilogram of body weight is correct. It may be a good deal less than that. Accurate figures of the protein requirements of children are not available. Nobody has any adequate idea as to what these requirements are. Last summer I saw three boys who bore out very well what Dr. Chapin said. I never have seen more healthy boys. They were athletes, ranging from 12 to 16 years old. They were perfectly well in every way. They had always been vegetarians. The mother of these boys wanted to know whether this was a suitable diet for them. They weighed from 10 to 15 per cent. more than normal children of their respective ages, and they were also taller and bigger than most children of those ages would have been. We worked out their nitrogen metabolism and found that they were receiving a very adequate supply of nitrogen, apparently. Those boys had never had any animal food of any sort and still they had developed normally in every way.

DR. HENRY DWIGHT CHAPIN, New York: My object in presenting this paper was to show the wide field that the pediatrician may and should occupy, not only in treating individual cases, but in approaching broad social questions; and this certainly is one of the most important ones. At a time when laboring men are striking and crying for porterhouse steaks, and everyone is feeling that the food question is so very important, we can simplify it a great deal, and the time to simplify it is at the beginning of life. We can give a thoroughly balanced, nutritious diet from the beginning, and carry the child through puberty to manhood or womanhood, with a thorough development on food that is nutritious, and at the same time economical. That is the great public question of the day, and the pediatricians are going to solve it.

9. New and Nonofficial Remedies, 1920, Chicago, American Medical Association, p. 177.

THE TEACHING OF MEDICINE

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I have been greatly interested in recent articles, in THE JOURNAL and elsewhere, dealing with medical education. Foster, Wood, Symmers, Hare, Bastedo and Vaughan have presented various phases of this subject. The report of the Congress on Medical Education and Licensure, with its committees regarding teachers and teaching, is evidence of an increasingly active interest in the problem by that influential body. All this is extremely gratifying to those who are teaching medical students, because inquiry and discussion always mean betterment of existing conditions. Many things might be said for or against numerous questions raised by the foregoing writers or by participants in the congress. Instead, I wish to present a view that is broader than any of these, but which at the same time is intimately related to most of them.

One burden of many of the articles to which reference has been made is that the curriculum of medical colleges is overcrowded. With this all teachers will agree. Yet some departments are insistent in their demands for additional hours in the schedule, and still other subjects possibly should be added. What is to be done? Suggested remedies are few, and excepting that of making postgraduate work of waiting subjects, disappointingly indefinite. So far as I have read, no one has referred to improvement of existing methods of teaching as a possible aid to the overloaded curriculum. I believe that much of a practical nature for the relief of present conditions can and ought to be done by teachers themselves. In this way concrete help may be afforded the more or less abstract efforts of authoritative curriculum makers. I wish to suggest three ways in which the time now used for teaching what is on the schedule may be lessened. If this can be done, scheduled subjects now slighted may be given more time and others may possibly be added.

1. DEVOTE LESS TIME TO LABORATORY INSTRUCTION

In these days of emphasis on laboratory training as a foundation for clinical medicine and when laboratory expansion is a dominant note, this statement may sound as the voice of one crying in the wilderness. Nevertheless, I believe that many hours can thus be saved without detriment to the laboratory side of the

student's education. I do not say, "Give less laboratory instructions"; I do say, "Give less time to it." The two are not synonymous. The problem, as I see it, is one of efficiency. The business man installs filing systems, card indexes and adding machines, shortens methods, systematizes his work, and is able to accomplish much more in less time; then he takes on more business. In my opinion this principle can be applied in our laboratories with a saving of time and no sacrifice of knowledge imparted; in fact, improved methods of teaching should result in the student's learning more in the shorter time.

In illustration: For seventeen years (exclusive of one year in Siam) I have been teaching morbid histology, and I have acquired a very positive belief that eighty well chosen sections are sufficient for this course, instead of from 100 to 150 or more, as are usually employed. With these can be given all the knowledge of morbid histology that a second or third year student should be expected to acquire. This statement is based on observation of how students work in laboratories and on the fact that only a very small percentage (one or two) will study sections after leaving the laboratory. The exact working out of this reduction problem in each laboratory will in the final points depend largely on the individual in charge. Regarding my own method of teaching morbid histology and how I would apply it on the suggested basis, I hope later to write with some detail; that would be out of place in this article, which is intended to be broadly suggestive rather than insistent on personal ideas.

Suffice it to say that the eighty sections should be stained by technicians, the student's time being too valuable to be occupied with this work. Those sections in which the lesion is well shown by hematoxylin and eosin could be kept as loan collections. The others should be freshly stained by van Gieson's stain because many lesions cannot be satisfactorily demonstrated in eosin preparations, though this is often attempted. With this fundamental requirement as to sections, with properly systematized demonstrations (didactic and lantern), and a sufficient number of demonstrators, I believe that a practical, instructive and quite satisfactory course in morbid histology can be given in 100 hours. If so, why use from 175 to 200? We are teaching future practitioners of medicine, not technical laboratory experts; morbid histology is part of a greatly overcrowded course; and the prime object of a medical college is to teach the prevention, diagnosis and treatment of disease. Special work may require further histologic knowledge on the part of a few; this is postgraduate or vacation work, as all specialties must be.

Now, if this reduction process can be applied to morbid histology, why not to normal histology, bacteriology, chemistry, physiology? The questionnaire reported to the congress gives to histology (including organology) and embryology 280 hours. I am asking those teachers whose composite figures are 280 hours whether, in case an official edict (as may well happen) requires less laboratory time in order to balance the curriculum, they could not give students essentially the same facts in 200 or an even smaller number of hours? I feel sure that if thus presented the students will have no difficulty in acquiring them in this lesser time.

In the bacteriologic laboratory are we requiring students to learn the characteristic growth of each organism on six to ten different mediums? This is knowledge which only expert bacteriologists have the least reason for possessing. In the physiologic and chemical laboratories are there exercises which theoretically appear desirable but which really are nonessential, or are beyond the capacity of the student to grasp or the curriculum to accommodate? Is biologic chemistry justified in asking for 260 to 280 hours? I ask these questions as a laboratory teacher and a firm believer in the value of laboratory training. Are we doing what we should do in the least possible time or can we do this essentially as well in less and hand over to the student a goodly number of hours to be used in the study of patients? I have stated what I believe I can do in my branch.

Army officers report that one of the noticeable things in the medical service of the training camps during the war was the inability of graduates of recent years to make physical examinations and give a diagnosis. More bedside instruction of students is very properly the suggested remedy. But whence are the hours to come? I believe that a not far distant future will point to the laboratories. Let us, then, to use a phrase beloved of politicians, have "reform within the party" before it is forced on us from without. To maintain the valued place of laboratory training in medical education we should not only avoid undue expansion; we should retrench wherever possible.

2. REDUCE THE TIME DEVOTED TO LECTURES

Some lecturers give value received for the hour spent by students listening to them. Many do not. Why not apply the same principle just suggested for laboratory workers, in some of the following ways, for example? Give only the essentials in an orderly form with outlines and headings that students can follow and incorporate in their notes. As a rule, spend little time on theories unless there are no available facts. Quotations from literature should have a minimum of space, even as illustrative quotations. Textbooks are not to be used as lectures; they are for students to read. The lecturer's time is better spent in explaining the content of the book, with homely language and illustration not considered worthy of printing. This is because most textbooks are written in fear of critical reviewers rather than with a righteous regard for the student learner. Lectures should not be intricate dissertations for the delectation of learned men, but clear, concise presentations of the subject at hand, designedly at the level of the student's understanding. Remember you are to hold him to account later for what he has obtained from these hours.

I think that one trouble with us as teachers is that we become more or less fanatical and develop the obsession that our branch is the only one really worth while. Therefore, we must deliver it to students complete—facts, statistics, theories, speculations, probabilities and even possibilities. A very laudable ambition indeed—if possible to execute. But the student can take only a very small, carefully prepared, digestible or even predigested portion of this great mass of knowledge and theory. He has almost to be desensitized to this foreign protein. How easy to give him mental anaphylaxis with a ponderous dose in the shape of a badly prepared, abstruse lecture!

Another reason for lack of preparation and condensation of lectures is pure inertia. (Were I not including myself as a teacher in these statements, I would have used the word laziness.) It is much easier to say a thing in fifty-five minutes than in forty,

or to devote sixty instead of forty lectures to a subject when it has enough material for 100 or 200. Boiling down, systematizing, outlining, selecting, rejecting—all this is time-consuming and tiresome and even vexatious when one has little enough time to keep himself informed of progress in his own branch, to say nothing of related branches. But emphatically it is the business of a teacher so to do. He has no right to do otherwise. It would have been much easier for me to put these few ideas in a ten-page article instead of the length it is. But I have no right to ask you to read so much to get a little. And yet you can read this or not as you choose; the student must get the substance of his lectures, no matter how it is served.

How, then, can we apply the reduction process to lecture courses? By condensing, by giving fundamentals instead of recent unproved speculations and experiments. Instead of a continuous talk with no divisions, give headings and points; you, as well as the student, can follow it much better. Cut the regular course 10, 20, 30 per cent. in time. If the one hour period be deemed the best length for lectures, reduce the number. Dividing the session into at least two terms will aid in this. With the whole session as a term it is very easy to extend through it a course of lectures that really could be given in considerably less time. The shorter term will help condense the work. I am not one of those who believe that didactic teaching should be entirely eliminated. Lectures permit giving to an entire class systematic instruction that cannot as well be given in laboratory or ward. But much can be done toward lessening the time devoted to them.

3. SAVE TIME BY MORE INTIMATE CORRELATION OF DEPARTMENTS

This means real teamwork. To institute it, the members of the faculty and their first assistants should meet and arrange in exact detail the subjects and parts of subjects each department is to handle. For instance, that portean subject inflammation is discussed in some of its phases by every department, and necessarily so. But only one department should deal with the general pathology of inflammation as a tissue process. That department is pathology, because it has the gross and microscopic material with which to demonstrate the tissue changes. Then the surgeon and gynecologist and obstetrician and others should not take up these points. Let them deal with the symptoms and diagnosis and treatment of inflammation of the organ they are discussing. Let them tell what to do with abscess of the lung or liver or pelvis, but leave out the description of *an abscess*. In the same way the pathologist describes types of inflammation of mucous membranes; the clinician shows cases of these, gives symptoms and treatment, but does not take up half his hour describing catarrhal or diphtheritic or hemorrhagic inflammation as such. Repetition is admittedly the way in which one learns; but the length of the medical course does not permit of several departments giving the same subject.

In the same way a course on surgical anatomy, if it be given, should not spend most of the time with details of descriptive anatomy; problems of the surgeon are to be uppermost. Diseases of the blood are to be handled by the medical or pathologic department, not by both. How much of the subject of syphilis is considered by the genito-urinary department, the pathologic department and the lecturer on etiology? Many similar problems will present themselves in the conferences mentioned. Time can be saved if they are adjusted with the knowledge and consent of those concerned. If left to the dean or the curriculum committee, satisfactory results will not be secured.

But, says some one, I must go over this work that belongs to another department because there it has not properly been taught. This sometimes is too true; but it is very easy to overdo this accusation. Such a spirit engenders sarcastic ideas and references to other departments, and interferes with good teaching. It is so easy for the morbid anatomist or histologist to intimate gently but firmly that he has to spend much time making good the deficient instruction in the anatomic department. And the staff in clinical medicine and surgery and obstetrics bemoan that pathology has not been properly taught. And the pathologist waxes sarcastic over mistaken diagnoses by clinicians.

As a help along this line, I believe that these conferences to divide subjects can well discuss methods of teaching and their results as viewed by other departments. Let the various branches compare notes and the teachers say to each other in a friendly spirit what they have been saying to others in sarcasm or hurtful criticism. Determine what is needed from each to give students a well balanced course, and then each do his part. Each should be willing to give up teaching hobbies if these do not fit in the general scheme or are not conducive to real teamwork. Finally, if there is a department that really is not doing its work properly or will not cooperate with the others, these conferences will show this and the governing board can act accordingly.

In connection with these teachers' meetings, it should be noted that I suggested the inclusion of first assistants (whatever their title), not only because they spend much more time with the students than do the heads of departments (in other words, do most of the teaching) but also because they get more of the student's point of view. The student dare not approach the professor with his difficulties, but he feels fairly free to unburden himself to assistants. And I am speaking not only for the student body but also for the teachers when I say that the ideas and suggestions of the former are not to be disregarded. They are young men, many of them well along in the twenties, and not a few of them have previously taught school. And every one knows whether the teacher, whether professor or instructor, is presenting his subject in a way that can be understood. They are not to be asked to prepare the curriculum or to decide just how subjects are to be taught, but their comments on the effectiveness of teaching methods are most valuable. I have learned much from students.

CONCLUSIONS

The medical curriculum is now overcrowded, and still other subjects in modern medicine are waiting to be added.

The demand for increased hours for subjects now on the schedule, especially laboratory branches, is making worse, instead of relieving, this condition.

In this article are offered suggestions for practical relief by lessening the number of hours given to each subject, except the actual study of patients.

The principle advanced is that of applying efficiency methods to teaching, with the idea of imparting the

same knowledge in less time. In laboratories, condense to essentials; in lectures, give systematized fundamentals without aiming at entirety; between departments, secure real teamwork.

The medical school that effectually utilizes this principle will be blessed by its students and honored wherever its graduates may serve.

THE DIAGNOSIS OF HUMAN PLAGUE

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Much has been written on the diagnosis of bubonic plague in rats and other rodents, but very little has appeared, in this country at least, concerning the disease as it appears in man. Diagnosis is a matter of much more than academic interest, particularly to physicians resident in our seaports, for it is the prediction that it is only a matter of time when this disease will appear in many if not all of the seaports of the United States. When infection does occur, the first observed manifestation will be a human case, and for the diagnosis of this dependence must primarily be placed in the practicing physician.

The early discovery of the occurrence of plague infection in a community is of supreme importance. In the United States, methods of control have been developed which can with certainty be depended on to limit and eradicate plague infection. If the infection is discovered early, control measures can prevent hundreds of human cases and can almost at once eliminate the danger of spread to other cities; hence it certainly behooves us to be acquainted with at least the principal clinical signs and symptoms.

Unfortunately, textbooks give little attention to plague, and their descriptions of the disease are usually generalizations without outstanding points that may stay in the reader's memory. There are good descriptions of plague in the literature, but mostly these are in books on tropical medicine, too seldom studied by the average physician. For a more extended description than is given herein, the reader is referred to Stitt's[1] "Diagnostics and Treatment of Tropical Diseases." Since my intention is to emphasize the "high points" of plague, no lengthy or very detailed description is being attempted.

TYPES OF THE DISEASE

Plague occurs in four forms, only one of which far exceeds the others in importance. They are, in order of frequency and importance to the American physician, bubonic, pestis minor, septicemia and pneumonic. Of these, bubonic is far and away the most important to us, since it is the type that is most likely to occur in this country. Recently there has been a small outbreak of pneumonic plague in one of our western cities, and it is realized that should another such outbreak occur and get beyond control, a fearful epidemic might ensue; but the chances of this are regarded, on good grounds, as remote compared with those of bubonic cases making their appearance.

Bubonic Plague.—There are three principal symptoms of this type of plague, and one clinical sign, surely a small array to remember. The symptoms are sudden onset, rise of temperature and marked prostration. The sign is the bubo. The onset is usually quite sudden, the patient feeling well in the morning, say, and very sick before the end of the day. At onset frequently appears mental haziness and disordered motor coordination resembling similar conditions in some stages of alcoholic intoxication. A chill is quite common. The temperature varies from 100 to 106 F., with 102 as the average. Prostration is as marked as in severe influenza, or more so; on the fourth or fifth day of the disease the patient is apt to be semicomatose and limp as a bag of meal. These signs may vary in degree, cases sometimes being seen which merge into pestis minor. The usual picture is that of a very sick man with temperature of 102 or thereabouts, who complains of a bubo. Minor symptoms are full but rapid and compressible pulse, injected conjunctivae and flushed skin. The important point is the association of these symptoms with a bubo. The plague bubo is characteristic.

The bubo, nine times out of ten, is femoral and virtually always on one side only. Occasionally axillary buboes occur due to infection through flea bites on the hand or forearm, and very rarely the glands of the neck are the ones affected. Since, however, the rat flea usually bites man on the lower portion of the leg, we find that scarpa's triangle on one leg or the other is the site of election. It is not to be inferred from this that the inguinal glands above the bubo are normal—far from it, as a rule; but usually a glance is enough to determine that the main mass is below Poupart's ligament, though a lesser swelling frequently appears above it.

The bubo has four main characteristics: It appears coincidentally (approximately) with the onset of the disease; the swelling is caused by infiltration of the tissues with fluid at least as much as if not more than by enlargement of the glands; the skin immediately over the bubo is hot and red; and the mass is exceedingly tender and painful to the touch. The bubo is an entity: not a string of enlarged glands, but a mass of acutely engorged necrotic glands embedded in gelatinous inflammatory tissue. It appears suddenly and does not suppurate until a week or two after the onset, if at all. Unlike venereal buboes, it shows a broad, flat surface, seldom coming to a point. When seen within the first three or four days, the individual large glands can be made out; thereafter the infiltrated tissue toughens and only a large, hard mass is palpable.

Minor signs are palpable spleen, large liver and occasionally the presence of a blister or "phlyctenule" on the extremity carrying the bubo. The last occurs only in about 5 per cent. of cases, but should always be searched for because, if found, it renders diagnosis exceedingly easy, smears from the contents revealing the typical *B. pestis* in tremendous numbers. These phlyctenules resemble blisters with turbid contents; they vary from one-half inch to an inch and a half in diameter.

Pestis Minor.—Pestis minor is the mild form of bubonic plague. It differs from the description above in lacking a sudden onset and prostration; fever is usually present for two or three days, with general malaise. The bubo is quite characteristic, but is likely to develop more slowly. These cases are usually seen late, when the bubo is hard and only moderately tender. The patients usually recover, the bubo being slowly absorbed, occasionally suppurating. Cases in which

1. Stitt, E. R.: The Diagnostics and Treatment of Tropical Diseases, Ed. 3, Philadelphia, P. Blakiston's Son & Co., 1919.

the patients do not recover pass into the more severe type.

Septicemic Plague.—This is the type in which there is an overwhelming infection of the blood, with death in three or four days, without the appearance of buboes. It need not be considered at any length here, for the reason that its diagnosis without previous knowledge of the existence of plague in the community is hardly to be expected. All that the physician sees is a patient who has suddenly been taken very ill, and who dies without showing any definite evidence of what ails him. At necropsy it can be diagnosed definitely if smears and guinea-pig inoculations are made from liver and spleen.

Pneumonic Plague.—In pneumonic plague, we have a relatively rare form of the disease which, however, being directly contagious, is highly apt to become epidemic when it does appear and with disastrous results. It is unlikely to occur in the Southern cities, but from San Francisco and Norfolk on the two coasts North it must be borne in mind as a possible menace.

Primary pneumonic cases seldom occur in warm climates, since for direct droplet infection of the respiratory passages it has been definitely shown that conditions preventing even moderately rapid drying are necessary. For example, the great epidemic of pneumonic plague in Manchuria was associated with tightly closed native homes and a severely cold winter, while in India where pneumonic involvement from axillary buboes is not uncommon, primary pneumonic infection of attendants on such cases is rare.

Plague pneumonia differs from other forms of pneumonia on three points: After sudden onset, the patient is extremely prostrated with almost no chest signs; by the time definite involvement of the lungs is demonstrable, the patient dies. The sputum is watery, never thick and tenacious, and soon becomes very bloody; the sputum contains typical *B. pestis* in large numbers. Pneumonic involvement occasionally supervenes in bubonic cases.

DIAGNOSIS

Plague is one of the few diseases which can be absolutely diagnosed by the bacteriologic findings. Any case still showing well marked signs or symptoms can be positively shown either to be plague or not plague by proper laboratory methods. *Bacillus pestis* can always be found, if it is present.

Procedures for Recovery of the Organisms.—In bubonic plague and pestis minor, the organism is obtained by inserting the needle (18 or 20 gage) of a syringe into the bubo, going into a gland, if palpable, and aspirating some of the gland juice. One or two drops is usually all that can be aspirated, but this amount is quite sufficient. Most of this is used to make smears, after preparation of which 1 or 2 c.c. of salt solution, or just water, are drawn into the syringe, shaken up a bit and portions of it injected subcutaneously or intraperitoneally into two guinea-pigs. In 90 per cent. of cases of plague the characteristic bipolar bacilli will appear in the smears; in 99 per cent. of cases, one or both of the guinea-pigs will die within ten days, showing the characteristic injection, bubo, large liver and large, granular spleen, with the bacilli present in great number in smears. Intraperitoneal injection causes earlier death of the guinea-pigs, but without the appearance of bubo or markedly granular spleen. It has the advantage of speed and the appearance in the peritoneal exudate of a practically pure culture of *B. pestis*.

In suspected septicemic plague, 3 or 4 c.c. of blood is drawn, thick smears made and guinea-pigs inoculated. In only a few of these cases will the smears be positive, but the guinea-pigs are quite reliable, having been proved susceptible to as few as three or four bacilli.

In pneumonic plague, *B. pestis* is present in ever increasing numbers in the sputum. Guinea-pigs should be inoculated for production of the characteristic lesions in all cases, since the microscopic appearance, except to the eye of an experienced observer, is not a reliable guide.

In preparing smears, they should be made reasonably thin. After drying in air, they should be fixed by passing once or twice through a flame and then stained with carbolthionin, carbolfuchsin or Loeffler methylene blue, preferably the former when obtainable, since it brings out best the bipolar staining. The plague organism is a relatively short, thick, rounded end or oval bacillus. When it is present in smears from tissues at all it usually occurs in considerable numbers; a diagnosis should never be based on two or three bacilli. Smears showing *B. pestis* have three principal characteristics: The bacilli are lightly stained and a considerable proportion of them show distinctly heavier staining at the two ends, shading down to the central portion, which is almost completely clear (the proportion of bipolar stained individuals varies very much in different smears, but is almost never 100 per cent). The individuals vary markedly in size from short coccobacillary and round coccoid forms to rods two or three times as long as wide, with all intervening sizes. There is no particular arrangement, chains are not formed, and individuals do not lie parallel. In smears from human buboes it is not unusual to find plague bacilli inside of phagocytes.

When any case suspected of plague infection has progressed to the point of finding what are believed to be specific organisms or suspicious lesions in guinea-pigs, it should be reported to the proper health authorities as a suspicious case, the absolute determination of the specificity of the organism, which is a somewhat complicated procedure, being placed in the hands of a competent bacteriologist.

POSTMORTEM APPEARANCE

The postmortem appearance of human cases differs somewhat in the various types, except that in the bubo and hemorrhagic pneumonia there are no very marked gross lesions. The bubo cannot be "shelled out," but must be dissected out. On section it shows the large hemorrhagic, necrotic or caseous glands embedded in a mass of blood-stained more or less gelatinous inflammatory tissue. Only the glands themselves are necrotic. The viscera show marked enlargement and congestion of the spleen and liver. Smears from spleen, liver and bubo show *B. pestis* usually in profusion. In plague pneumonia, large areas of hemorrhagic, necrotic consolidation of the lungs appear with plague bacilli in great numbers. Guinea-pigs should always be inoculated for confirmation.

In closing, it is proper to emphasize the statement at the opening of this paper that the probability of plague eventually appearing at our seaport cities makes the diagnosis of human cases a matter of highly practical importance and not academic interest.

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CLINICAL MANIFESTATIONS OF INFECTION OF THE LATERAL SINUS *

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Infection of the lateral sinus we submit as a comprehensive term covering the subdivisions usually spoken of as phlebitis, sinus thrombosis and septicemia. The object of this paper is to differentiate these types, if possible, more clearly, in order that it may be shown that the diagnosis is often exceedingly difficult, even when the facilities of a large hospital are at hand, that the dangerous types may not have thrombosis, and that the cases in which the operative findings disclose complete blocking of the sinus extending back to the torcular have developed more slowly and are the least dangerous. Although this subject is one that has been discussed many times, yet no one will deny that many cases are still being overlooked. This is particularly true in children and in adults when the symptoms are atypical. It is probably true in the past that we have attempted to define too specifically the clinical picture of a complication resulting in infection of the lateral sinus in which the specific organism varies, and where no account is taken of the amount of toxins thrown into the circulation, whether it has been gradual or sudden or of the resistance of the host. This complication is not then a disease entity resulting from a specific infective organism, but must vary in its clinical manifestations with almost every case. Instead of a so-called typical picture with a chill, a sudden rise of temperature of 104 to 106 F., followed by a subnormal remission and sweating, there may be no chill, no temperature over 100, no subnormal remission or sweating; about the only thing common to all being an increased leukocytosis. If the blood stream has been invaded to any appreciable extent there must be an increased leukocytosis. The three cases here reported show three distinct types with temperature charts bearing no resemblance to each other, and yet it was necessary to ligate the jugular in all.

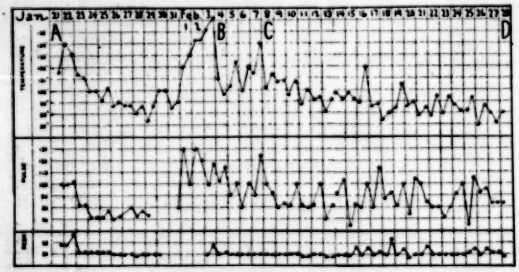

Chart 1.—Temperature, pulse and respiration in the case of P. B.: *A*, mastoid operation at Eliot Hospital; *B*, secondary mastoid operation and ligation of jugular; *C*, white blood cells, 17,400; *D*, discharged.

PATHOLOGY

The operative findings in mastoiditis in which the sinus is exposed give us no certain evidence as to the present or probable development of a thrombus in the lateral sinus or of the blood stream being invaded. We may have a perisinus abscess with the lateral sinus uncovered. The sinus wall may not appear normal in color, and may or may not be covered with granulations. There may be undoubted resistance to the touch from thickening of the wall, and yet no infection of the blood stream has resulted. On the other hand, there may be left a thick and healthy looking plate of bone over the sinus with infection already present. The exposed sinus, thickened wall, or change in color are only suggestive, although the first stage, especially when a thrombus is found, is usually a phlebitis involving the thickness of the vessel wall and resulting in roughening of the intima. While this in most cases is secondary to a suppurative otitis media and mastoiditis, one case was recently reported by Mosher in which the infection was an extension from a peritonsillar abscess. Other cases have been reported as secondary to a labyrinthitis, and in many the blood is the avenue through which the infection reaches the sinus. Again, at the time of the mastoid operation, if this has been performed during the congestive stage before the bone inflammation has been walled off by leukocytes, the operator may fail to remove all infected cells. These cells about the sinus may later break down, and three or four weeks after the original operation there may suddenly develop symptoms of sinus infection.

This is shown in the case of P. B. (Chart 1), seen in consultation Feb. 3, 1920. Eleven days after the primary mastoid operation following influenza, the temperature suddenly rose to 106, with a remission to 94.4. The boy was distinctly toxic, mentally clear, with a leukocytosis of 22,000 and 92 per cent. polymorphonuclears. His reflexes were within normal limits and there was no papillitis. The mastoid cavity was filling in with rather flabby granulations. There was tenderness over the emissary vein, with slight edema. The next day the mastoid was reoperated and the jugular ligated. Much soft bone was found at the tip and around the sinus; when the sinus was opened there was a gush of blood but no thrombus. The toxemia was in evidence clinically over a longer period than usual, on account of the poor resistance of the patient. His recovery was uneventful.

While the sinus infection may not be present at the time of the mastoid operation, if the sinus has been exposed, more bone should be removed and the edges made smooth in case it needs to be opened later. In the preinfective stage, if the invasion of the sinus has been slow and the infecting organism of low virulence, the resulting thrombus is likely to be large and even extend to the torcular.

In the case of A. M. G. (Chart 2), the ligation was performed one month after the primary mastoid operation. In the interval the patient had had an attack of whooping cough. At the end of three weeks the patient commenced to cry bitterly for ten minutes after coughing, grasping her head with her hands. Before this she was very quiet. There was no discharge from the middle ear, and the mastoid was healed, except for a small pustule over the tip. There was an increasing leukocytosis, which reached 26,000. There were no focal symptoms. Physical examination by a pediatrician was negative. The temperature was coming down, but the pain on coughing remained and the leukocytosis was increasing. It was thought best to explore. The mastoid was reopened. The aditus was found shut off, and the mastoid

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

cavity in the region of the antrum was healed. There was soft bone around the sinus, however, and the sinus wall was found thickened and covered with granulations. After ligation of the jugular, when the sinus wall was incised, there was found a thrombus that extended back so far that no attempt was made to remove it. A section of the sinus wall was removed and the usual packing applied. Recovery was uneventful.

These patients often undoubtedly recover without the condition being recognized. On the other hand, if a large amount of infective material of high virulence is suddenly thrown into the circulation, there may not be any thrombus found on opening the sinus. The incision of the sinus wall will be followed by a sudden gush of blood flooding the entire field, unless controlled by pressure. These are the cases in which ligation is urgent, for we now have a septicemia which will be followed by metastases if the general circulation is not shut off.

SYMPTOMS

Local.—The most constant in my experience has been edema and tenderness over the emissary vein. This, however, is only suggestive, for it is present in perisinus abscess and in some cases of mastoditis. When the primary periostitis over the cortex has subsided and is followed by edema and tenderness over the emissary vein as a later development, we expect that there is active trouble around the sinus. Of less importance, because more rare, is tenderness over the upper part of the jugular vein. I have seen it only a few times.

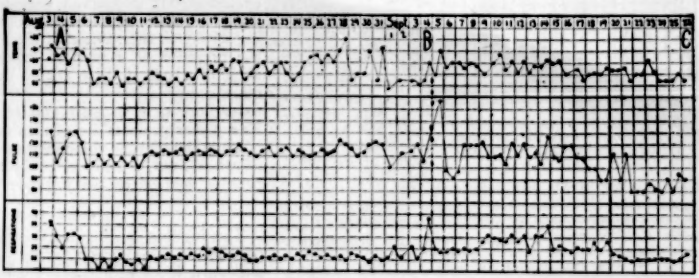

Chart 2.—Temperature, pulse and respiration in the case of A. M. G.: *A*, mastoid operation; *B*, ligation of jugular; *C*, discharged.

General.—One of the important symptoms is fever, which may be typical if the patient is markedly septic, but is never typical if the infection is mild, but depends on the amount of toxemia. In the severe cases we have a chill, temperature from 103 to 106, subnormal remission and sweating, i. e., a septic temperature. With this temperature there is marked leukocytosis and high polymorphonuclear percentage, and the diagnosis is very easy. Here Charts 3 and 4, of P. S., are of interest as being typical of a case with pronounced sepsis having the wide excursions between 95.2 and 106. It is also interesting from the age of the patient, as it occurred in a child 13 months old.

The baby had an acute infection, Aug. 1, 1919, with several reinfections and finally a general bronchitis. August 19 the temperature had fallen to 98 a. m., and 100 p. m. August 21 there was a double acute otitis media; temperature, 105; double paracentesis within twelve hours. August 22, free discharge. August 23, 11 a. m., chill; temperature, 105, with remission to 96.4 and marked prostration. August 24, 4 p. m., temperature, 106, and another chill; ears discharging freely. On this date I saw the patient in consultation. August 26, the temperature was from 105.6 to 106; pulse, 150; respiration, 60; white count, 24,000; polymorphonuclears, 70 per cent. There was no postaural swelling or tenderness, and no sagging of the posterior superior wall. The left ear looked like any middle ear with acute infection. The right membrana tympani was boggy, and we assumed that the trouble was on this side. The next day a mastoid operation with ligation of the jugular was done. There was a well developed tip cell and antrum with surrounding cells. When the sinus was opened, the blood flowed sluggishly and then more rapidly, no clearly defined clot having had time to form. Recovery was uneventful.

On the other hand, following the mastoid operation, the temperature, instead of dropping after one initial rise, may be continuos, ranging from 99.5 to 102, and extending over weeks. Between these extremes there may be any type (as in A. M. G.). Infection of the sinus is one of the most common complications of mastoiditis, and should always be suspected. Many cases with meningeal symptoms, due to a bacteremia from an infected sinus, cannot be differentiated from actual meningitis.

The case of E. F. P., soldier, seen at Camp Lee, is reported in full because of the complete data, even to the testing out of the virulence of the specific organism. We believe that the ligation of the jugular and the repeated drawing off of cerebrospinal fluid were the important factors in his recovery. Unfortunately, for scientific purposes, he was given some antistreptococcus serum. He had already commenced to improve, but the order for the serum, which had been given two days before, had not been withdrawn, and so it was used.

E. F. P., private, Co. K, Sixty-Second Infantry, bricklayer, whose family history was negative, had had the usual diseases of childhood, but no other illness except a right acute otitis media when 16 years of age, lasting three days. The patient was admitted to the base hospital at Camp Lee, Va., Dec. 4, 1918, complaining of sore throat which had existed for four days previous to admission. He had pain in the right ear, which started discharging, Dec. 3, 1918. Examination of the throat revealed bilateral acute follicular tonsillitis. *Streptococcus hemolyticus* was obtained on culture. The patient complained of slight pain over the right mastoid region. A profuse mucopurulent discharge continued to December 7, when it became less marked, remaining about the same until December 20, when the membrana tympani was incised, a profuse discharge following.

December 23, the temperature was 102, respiration 24, pulse from 116 to 120. At this time the patient developed an acute exacerbation of a subsiding tonsillitis with some pain in the mastoid region and tenderness on pressure.

During the night of December 27-28, the patient vomited. During December 28-29, he became drowsy and restless, and had a chill. There was marked stiffness of the muscles of the back. Kernig's sign was positive.

December 29, the patient was somewhat drowsy; he had vomited three times in the last forty-eight hours. There was no mastoid tenderness or edema. The inner end of the right auditory canal was considerably narrowed and there was some drooping of the superior canal wall. The temperature was 103 at noon. The first lumbar puncture was performed. The fluid was under pressure and was cloudy. Culture revealed the presence of hemolytic streptococcus. A culture from the middle ear revealed the same organism.

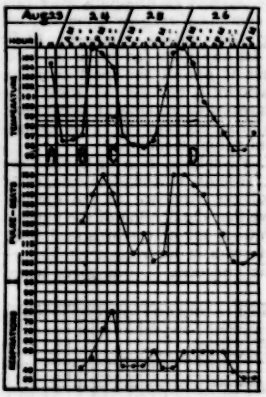

Chart 3.—Four hour chart in the case of P. S.: *A*, chill; *B*, white blood cells, 27,000; *C*, chill; *D*, white blood cells, 34,000; polymorphonuclear leukocytes, 70 per cent.

A simple right mastoidectomy was performed. The cells were broken down and the cavity was filled with pus under pressure. The area of the lateral sinuses was exposed by disease and covered with granulations. A small area of the dura over the antrum was exposed by the disease. All necrotic bone was removed.

December 30, the patient was very restless, with twitching of the face muscles and beginning papillitis of the right eye. An inoculated mouse died in four hours. As the lateral sinus was exposed and covered with granulations, and as hemolytic streptococci were found in the spinal fluid and isolated from the ear, it seemed advisable to ligate the internal jugular vein, which was done. Lumbar puncture revealed 680 mononuclear cells, 80 per cent. polymorphonuclears. There were faint traces of globulation. No meningococci were found.

Dec. 31, 1918, 25 c.c. of cloudy fluid was withdrawn from the spinal canal, revealing 390 cells; 70 per cent. polymorphonuclears, smear negative. Jan. 1, 1919, the fourth lumbar puncture was performed, 35 c.c. of fluid being withdrawn. It was clearer than on the previous day, and showed 320 cells, negative smear, and no growth on culture. Twenty-five c.c. of antistreptococcus serum was given intraspinally. At 8 p. m., 25 per cent. glucose solution was given intravenously. The patient was restless and delirious; the condition was not very good.

January 2, he developed erysipelas on the right side of the face and neck. The fifth lumbar puncture was performed. Fifty c.c. of practically clear fluid was withdrawn, and 25 c.c. of antistreptococcus serum injected; 200 cells; smear, negative. At 3 p. m., 25 per cent. glucose solution, 550 c.c., was given intravenously over a period of one and one-half hours.

January 3, the sixth lumbar puncture was performed. Seventy-five c.c. of clear fluid was obtained, and 25 c.c. of antistreptococcus serum was injected; 300 cells; smear, negative. At 10:30 a. m., 550 c.c. of 25 per cent. glucose solution was given intravenously over a period of one and one-half hours. The general condition was very much improved.

January 4, at the seventh lumbar puncture, 35 c.c. of fluid was withdrawn; 20 c.c. of antistreptococcus serum was injected; cell count, 250; polymorphonuclears, 78 per cent.; smear, negative. The general condition was improved; the patient took nourishment well and did not complain. The erysipelas was improved. The dressing was changed; there was considerable pus from the neck wound, but no discharge from the middle ear.

January 5, examination revealed normal eyegrounds. About this time some swelling of the right temporal region was noticed, with some brawniness of the tissue.

January 10, the condition was very good, the ear dry, the mastoid wound clean, with very much less discharge from the neck wound, and the patient was allowed out of bed for two hours. The swelling over the temporal region was increasing, and the patient complained of headache. This condition increased in severity up to January 25, when it was decided to open wound to see whether or not there was any pus in the temporal region. Operation revealed zygomatic vertical perforation and a large epidural abscess; about 3 drams of pus was obtained. January 2, the white cell count was 15,300; January 3, 17,100; January 6, 17,600. From this time on the patient made an uneventful recovery. The mastoid wound was clean and in good condition. The general condition was very good.

In this case there were present mental dulness, positive Kernig's sign, stiff neck, papillitis, turbid cerebrospinal fluid, bacteremia, virulent organisms that killed a mouse in four hours, and yet the patient recovered after ligation of the jugular, and repeated withdrawal of cerebrospinal fluid.

When symptoms of meningitis follow mastoiditis, however stormy their character, the jugular should be tied at once. Sinus infection is often diagnosed by exclusion. If a mastoid operation turns out badly and an exploratory secondary operation reveals nothing wrong in the technic of the primary operation, in the presence of a marked leukocytosis the jugular should be tied, if there are no definite indications of other complications. With a septic patient it is safer to explore than to wait and see what will happen. Every year patients die of meningitis and no attempt is made to ascertain the condition of the sinus. Many of these lives, I believe, could have been saved by prompt ligation of the jugular.

OPERATION

The jugular, having been exposed by an incision parallel to the anterior border of the sternomastoid and on a level with the thyroid cartilage, is ligated in two places and dropped back into its bed. The superficial fascia is brought together by two or three interrupted sutures. Lastly, the skin is brought together by a continuous suture and a collodion dressing applied to prevent infection from above. With a fresh toilet and a change of gown and gloves, the operator now blocks off and incises the sinus which was widely exposed at the mastoid operation. If a thrombus is present and is circumscribed so as to be removed readily, there is no surgical contraindication. On the other hand, if the thrombus is so extensive that there is danger of pushing infected material farther on, I feel that it is better judgment to remove a section of the sinus wall and let the thrombus remain. It seems faulty technic to remove a clot that is acting as a protection and then block the sinus and have another form that may not be so

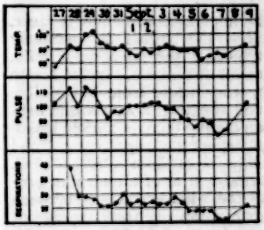

Chart 4.—Temperature, pulse and respiration in the case of P. S.

safe. If a clot is not present, iodoform wick is packed down on each side of the sinus wall and then on top, and kept distinct from the general packing of the mastoid cavity for the reason that the sinus packing should not be disturbed for eight or nine days and should then be removed very gradually. The mastoid dressing will usually be changed on the fourth or fifth day.

CONCLUSIONS

1. Sinus infection should be used as a comprehensive term covering three subdivisions: phlebitis, thrombosis and septicemia.
2. The symptoms vary with the infecting organism, the avenue of invasion, stage of the complication and resistance of the host.
3. The diagnosis can be made only by a study of the history, local conditions and blood findings.
4. There is no typical picture.
5. In septic cases with bacteremia, all the symptoms of meningitis may be present.

ABSTRACT OF DISCUSSION

DR. CULLEN F. WELTY, San Francisco: I saw four cases without any symptoms whatever, in which complete obstruction of the sinus was discovered at operation. I think many cases of sinus thrombosis are not detected. These cases were found accidentally; in two, the sinus was full of pus; in the other two, an infected thrombus was present.

As I understand it, Dr. Emerson ligates the jugular in every case. I think it is a nice point to decide, when to ligate and when not to ligate the jugular. In some instances ligation is not necessary and in others it is quite important. The invasion of the sinus does not begin as a clot infecting the whole sinus. There is a small invasion or a deposit on the inside of the vessel, which is called a mural clot, that only partially obstructs the vessel, and as it increases in size complete obstruction occurs. I maintain that in this mural clot (which the Doctor did not find) he had an infected sinus just the same, but in this particular case, you do not need to ligate the jugular. Furthermore, if the jugular is ligated, it is bad surgery to drop the ligated vessel back into the wound and cover it up, because there is a piece of the thrombus within the ligated and covered up vessel or an infection of the vessel wall. In getting rid of infection, we must do all we can to get rid of every possible bit of that clot. When the jugular is ligated, go down until bleeding from the petrosals occurs, if possible. Sometimes the petrosals are likewise thrombosed. Then go to the distal end and remove the bone until a healthy sinus is in view, then curet the sinus until free bleeding occurs. I do not think it good judgment to put a tampon into a sinus that does not bleed freely. The cases that have not had a speedy convalescence have been those in which I could not get free bleeding from the posterior wound.

DR. JOHN F. BARNHILL, Indianapolis: The internist often sees these patients first and does not always recognize them until too late. It is the experience of many that if these patients are seen early by the otologist and operated on, a vast majority of them will get well; whereas formerly, when classical symptoms were awaited, most of them died. Dr. Ewing W. Day, of Pittsburgh, reported six cases of sinus thrombosis without any fever or little fever; and now Dr. Welty reports four cases without fever. Such reports serve as a warning always to be on guard. I never have seen a case of this type, but possibly I may have overlooked some cases that were thus atypical. Diagnosis is most important, and these reports of cases lead us to believe that there are several types of sinus thrombosis, and that, therefore, we should be on the lookout for some type in almost every case of aural discharge. I have never seen a case of lateral sinus thrombosis with temperature so low as Dr. Emerson has stated; in two cases the temperature did not exceed 101 F. We should bear such possibilities in mind.

I have seen four cases such with no symptoms whatever except a continued temperature of septic type. In three of the four cases there were no aural symptoms, and no history of ear disease, except that there had previously occurred a discharge that had not continued longer than twenty-four hours. Concerning the question of dropping the stump back into the wound, I have always followed that plan, and have never seen any ill results.

DR. LEE W. DEAN, Iowa City: In my judgment, in every case where it is necessary to ligate the internal jugular, the gutta-percha drain should be left at the lower end of the wound.

DR. H. H. MARTIN, Savannah, Ga.: A boy of 20, who had had chronic otitis from the first year of his life, following scarlet fever, had a large granuloma in the ear, filling the external canal. His only complaint was frontal headache. I sent him to the hospital to have the granuloma removed and incidentally had a blood count made, which showed 28 000 leukocytes. The next morning he awoke complaining of a chilly feeling. When I saw him at noon he seemed to be all right. I did a simple mastoid operation with removal of the granuloma. I found no pus in the mastoid, but deep down a necrotic groove leading to the tip. Immediate improvement followed the operation, the leukocyte count dropping to 8,800. About two or three weeks afterward, however, the symptoms had become just about as they were in the beginning, the patient also complained of pain in the back of his neck. The leukocyte count was 20,000. I came to the conclusion that I had probably not uncovered the focus of infection in the mastoid, and reopened the wound and removed the posterior canal wall. He again improved for a few days, but complained intermittently of pain in the back of his neck, and his leukocyte count remained high. Eventually, we opened the sinus and found a nonseptic clot, a thrombus that was white and shriveled. Cultures revealed no pathogenic organism. The temperature never was higher than 101.5 F. Later there developed clear evidence of cerebral abscess which was evacuated, but without any result, other than, perhaps, that the boy lived somewhat longer. All the cases I have ever seen had choked disk, which appeared about the fourth week. Therefore, it seems to me that the outstanding diagnostic points in lateral sinus thrombosis are: frontal headache, vomiting without nausea, the presence of a high leukocytosis, pain in the back of the neck and choked disk.

DR. LEON E. WHITE, Boston: We examine all cases roentgenographically as part of our routine. Both mastoids are taken on the same plate so that comparison is easy. In a recent case, in which the question of involvement of the sinus was under discussion, the roentgen ray was most helpful. The involved sinus was very much larger and higher than the uninvolved sinus. In two cases infection was not suspected until the mastoid was opened. In many cases it is extremely difficult to determine the presence of a clot. I have had cases in which the assistants declared there was thrombosis, but on slitting the sinus there was the usual hemorrhage. As to the question of ligating the jugular, I feel that this should be done if there is infection enough in the sinus to warrant opening it. It is wrong not to eliminate the possibility of its draining into the system. If a patient has a high temperature and a high leukocyte count not otherwise explainable, we do not dare delay operation. Dr. Emerson is very apropos in saying that meningitis and sinus thrombosis are hard to differentiate in the early stages. Meningitis may be prevented by getting rid of the infection in the sinuses.

In the different services at the infirmary there are various methods of handling the neck wound. In my service we use metal clips, and at the lower angle of the wound we insert a small piece of silkworm gut which is removed in from twenty-four to forty-eight hours.

DR. FRANCIS P. EMERSON, Boston: Some of the questions that have arisen in regard to my paper I think are due to the fact that I tried as far as possible to keep strictly to the subject, and so I went over the operative technic very hurriedly.

One case which I reported, in which the temperature was 102 F. and then dropped to normal, I think probably would have terminated in recovery without operation. But in the presence of elevation of temperature and an increasing leukocytosis, the only safe course is to shut off the general circulation from the infection. I do not cut the jugular after ligating it. I ligate in two places and drop the entire vein back into the neck. The rest of my procedure is almost identical with that which Dr. Dean mentioned.

MIGRAINE THERAPY

BERNARD FANTUS, M.S., M.D.
Associate Professor of Therapeutics, Rush Medical College
CHICAGO

Some years ago, I came across the recommendation by T. Lauder Brunton of a mixture of sodium salicylate, 1 gram, and potassium bromid, 2 grams, for the relief of attacks of migraine, which was couched in terms of such enthusiasm [1] that I was led to employ it in suitable cases; and my success with this combination has been such that I have not as yet had the courage to experiment with modifications of the formula.

It is essential that the dose be given at the earliest possible moment when the headache is approaching; best, indeed, that it be given before it sets in by taking advantage of the signs by means of which these patients know that they will have a headache. In some it is a peculiar nervous irritability at bedtime, in which case the dose should be taken before the patient goes to sleep. In other cases, the patient awakens in the morning very drowsy and disinclined to rise, and perhaps with a feeling of weight in the head. If he now goes to sleep again, he wakes up with his headache. If, at the time when he first wakes up, he takes a dose of the medicine, the headache may be prevented. Whatever other "aurae" the patient may have, such as scotomas or fortification phenomena, should be seized on to introduce the dose into the system before emesis takes place, as the presence of vomiting makes the retention of the dose rather difficult. I have the impression that imparting effervescence to the medicine favors its efficiency and retention. If the whole dose is vomited up, the patient might be able to retain a quarter of it taken in a wineglassful of seltzer water every fifteen minutes. If a single dose does not suffice to jugulate the headache, a further dose may be taken hourly, until phenomena of salicylism, such as ringing in the ears, compel discontinuance. I have found it rarely necessary, however, to push the remedy to this point.

Effervescence may, of course, be secured by administration of the dose in seltzer water. It is more practical, however, to prescribe the remedy in this form:

	Gm. or Ce.
℞ Sodium salicylate	6.0
Potassium bromid	12.0
Sodium bicarbonate	12.0
Mix and divide into six blue powder papers.	
Tartaric acid	10.8
Divide into six white powder papers.	

Label: Mix contents of a white and a blue paper in half a glass of water. Repeat dose hourly if required.

For very nervous and presumably sensitive persons and for poorly nourished individuals, it is prudent to advise that half the dose be taken at first to see whether or not it might be sufficient. In this manner, possibly disagreeable effects, due to idiosyncrasies, would be avoided.

PROPHYLACTIC TREATMENT

Of course, the patient is also given a thorough physical examination, including a specialist's investigation of eye, ear, nose and throat, and roentgenoscopy of the teeth; and the attempt is made to eradicate or correct any physical defect found. It is just as important to place the patient under optimal hygienic conditions. This means the best hygiene for that particular individual: an adundance of sleep, a sufficiency of physical exercise (walking) to balance the usual excess of nervous work, a diet that might take cognizance of the idiosyncrasies of the individual and the requirements of daily bowel evacuation, and, above all, the cultivation of equanimity.

In some highly neurotic individuals, the prolonged administration of bromid, as in epilepsy, has been distinctly useful in lessening the frequency of the attacks.

It may be that, in view of the alleged potency of suggestion in this condition, the confidence with which I prescribe this treatment, and the assertion I usually make that I have a special remedy which I am quite sure will help the patient, may endow it with greater power than it intrinsically possesses. I also tell the patient that the prospects as to ultimate recovery are good, since, in the natural course of events, the tendency of these attacks will become less with advancing years. I furthermore advise the patient to report whenever a tendency to frequent recurrence manifests itself. In this case, the attempt to discover physical or hygienic defects is repeated; and another course of bromid is prescribed, or the dose of bromid that is being taken is increased.

1. Brunton, T. L.: On the Use of Bromide of Potassium and Salicylate of Sodium in Headache, in On Disorders of Assimilation, Digestion, etc., New York, the Macmillan Company, 1901, p. 320.

Clinical Notes, Suggestions, and New Instruments

ANTHRAX FROM REMOVING HIDE FROM MULE

RALPH KING, M.D., Olney, Ill.

W. L. and C. L., father and son, aged 46 and 21 years, respectively, lost a mule by death, March 21, 1920. The animal had been sick nine or ten days with a bad swelling of the head and one front leg. There were no sores or nasal discharge, and the animal was apparently paralyzed before death. About one hour after death the hide was removed and sold. They stated that they found water under the skin. Forty-eight hours later both were taken ill with chill and a temperature of 103 F. A few hours later painful papules appeared on the left index and right middle finger of the father and the external canthus of the left eye and point of the chin of the son. These lesions rapidly broke down into discharging ulcers with depressed gangrenous bases surrounded by an edematous induration. March 31, they were admitted to the Olney Sanitarium with marked prostration. A diagnosis of anthrax was made from the history and physical findings. The organisms were later demonstrable in the discharges from the ulcers.

The treatment consisted of 40 c.c. of antianthrax serum given to each in 20 c.c. doses intravenously at six hour intervals. This was followed by a slight reaction. Moist dressings of boric acid were applied to the eye, and 50 per cent. alcohol to the chin and finger lesions. They left the hospital in five days. Their convalescence was slow, likened by them as to "one that had typhoid." Scars are left at the site of the lesions with no other ill effects. No other animals

on this farm or those of their neighbors have had a similar illness.

On account of the prostration and the fact that ten days elapsed before their admission to the hospital, we consider their recovery remarkable.

TORSION OF SPERMATIC CORD

PETER MARSHALL MURRAY, M.D., WASHINGTON, D. C.
Assistant Surgeon, Freedmen's Hospital

C. P., a colored man, aged 28, laborer, with negative family history, who had had a mild case of gonorrhea five years before, with no complications, complained of pain in the paraumbilical region, May 29, 1920, had slight nausea, and vomited once. This attack came on without any apparent cause. Next day the pain had subsided, except in the lower right iliac fossa, and the right testicle began to swell. The testicle was not painful, but was tender to the touch and enlarged gradually. The patient continued to be comfortable; the pain subsided except on handling of the testicle. As no improvement followed rest in bed, elevation, ice bag, etc., for forty-eight hours, operation was performed. There was a moderate amount of straw colored fluid in the tunica Vaginalis. The spermatic cord was twisted inward two and one-half turns just proximal to the globus minor. The testicle and epididymis were swollen, dark, hemorrhagic, and almost gangrenous. Orchidectomy was performed. Recovery was prompt and uneventful, the patient being up and able to leave the house within a week. The symptoms in this case were very mild and after the first day the picture was certainly not one of strangulation.

1645 New Jersey Avenue N.W.

Special Article

OBSERVATIONS ON SOUTH AMERICA

II. PERU

WILLIAM J. MAYO, M.D.
ROCHESTER, MINN.

General Gorgas freed the coast country from yellow fever, but the disease is still to be found in the sparsely inhabited back country, both in northern Peru and in Ecuador. General Gorgas was engaged by the Peruvian government to continue the work of eradication, and it is hoped that yellow fever will soon be a thing of the past.

In 1532, just forty years after Columbus discovered America, Pizarro with 310 soldiers landed in Peru and overturned the Empire of the Incas. In 1535 he founded the city of Lima, which now has about 200,000 inhabitants. On viewing the mummified remains of the 6-foot buccaneer lying in state in the cathedral, one visions the great mental and physical force of this man who subjugated Peru in nine years, from the time of his landing to his assassination.

Peru is a vast country, half of it unmapped and scarcely explored. Between the Andes and the Pacific lies a narrow strip of land on which there is no rainfall. It has not rained in Lima for seventeen years, but the dust and general grime are forgotten in irrigated spots containing beautiful trees and flowers. Lima is 2½ miles from the ocean, with its port at Callao, 8 miles away. The Humboldt Antarctic Current, flowing along the west coast, keeps the climate pleasantly cool, but condenses the moisture in the air between the coast and the Andes and thus prevents rainfall. The lack of water is painfully apparent in Peru and has much to do with sanitary failures which even the dryness cannot wholly overcome. The country is tropical; and while the air is cool in the shade, it is very oppressive on exercise or in the sun. The noon siesta, a custom of the country, undoubtedly is based on human needs, for it recuperates the body from the results of the heat on the tissues, especially the nerve tissues. By dividing the day into two parts, the strain of the most trying hours in the climate of Peru and other tropical countries is reduced, and what might be called a protective neurasthenia, greatly resembling the neurasthenic state seen in the United States, is developed. Certainly the siesta, a two hours' rest in bed after the noon meal with the removal of day clothing, is useful in the treatment of neurasthenia. In the high valleys between the mountain ranges are fertile plateaus, the home of the Incas. The Amazon River, rising in the Peruvian Andes, has a port at the city of Iquitos in Peru which harbors vessels of considerable size. A railroad is being built connecting Iquitos with the Peruvian coastal plains.

Peru has much to interest the medical sightseer. All through South America the hospitals are of Spanish design, excellent for the tropics. They are usually of one story, with high ceilings, large high windows, large porch effects for shade, and surrounded by fine gardens. In Lima are two large charity hospitals. The older, the Hospital de Santa Ana for women and children, boys up to 10 years of age, has a capacity of 300 beds. A large new hospital is now being built to replace this old one, in which the government expects to install American nurses and American methods for caring for patients. One of the greatest innovations will be the introduction of wire screens against flies. Hospital Dos de Mayo for men was founded in commemoration of the victory over the Spanish fleet in Callao, May 2, 1866. The independence of Peru had, however, been declared in 1824. This hospital contains 700 beds and is more modern than the Santa Ana Hospital. Miss Soper, a trained nurse from London, has been working courageously for four years to develop a nurses' training school and to improve the nursing and hospital conditions generally. The results of her efforts are beginning to show.

Several cases of verrugas, a disease of the skin peculiar to Peru, were seen in one of the wards of this hospital. The disease is found in the higher Andes and is characterized by fever and eruption. The cause is unknown, although it is believed to be the bite of a night insect. Most patients recover, but there are fatal forms, when hemorrhages occur under the skin, forming pustules.

Both the Hospital de Santa Ana and the Hospital Dos de Mayo are maintained, as indeed are all municipal charities, from the public charity fund, which is accumulated by private contributions and public amusements.

The Italians, of whom there are many in Peru, maintain a good hospital, and the French also have a very good hospital of forty beds. There are a number of private hospitals, notably Dr. Febrie's, which is quite modern in its appointments. Dr. Graña's hospital, with a capacity of 100 beds, now being built on the seashore about 3 miles from Lima, will be the last word in modern construction and equipment. American nurses and a nurses' training school will be installed. There are several excellent hospitals connected with Amer-

ican mines in Peru, with American physicians and nurses.

Lima has 120 physicians, twenty of whom are surgeons. The surgical technic is far in advance of hospital installation, and the highest praise should be accorded these men for their excellent work, which is further illustration of the fact that surgical results depend on the surgeon and not on his surroundings. I attended many interesting clinics and saw Dr. Gasañeta, Dr. Aljovin, Dr. Carvallo, Dr. Denegri, Dr. Morales, Dr. Graña, and others doing clean, careful and skilful surgery. Physicians qualified to do good roentgen-ray and cystoscopic work are needed in Lima.

San Marcos University in Lima, the oldest in the Western Hemisphere, was founded in 1551. Señor Ngarteche Prado, president of the university, is a talented, gracious gentleman, fully equal to the duties devolving on him in the management of this great university, the only one in Peru, with its 4,500,000 inhabitants. The university medical school is also in Lima and is the only one in Peru; it has about 300 students. The spacious buildings are in beautiful grounds. Dissecting material is ample. The laboratories in charge of Dr. Hercelles, professor of bacteriology and pathology, are excellent. There are many unusual and beautifully preserved specimens in the museum of the medical school and in the laboratories. The university impresses one as being in every way a real teaching institution.

Primary school education, a course of six years, is compulsory in Peru; the secondary course of six years has a limited attendance. The medical student must add to the two courses two years of science and seven years of medicine, making in all nineteen years of study to obtain a medical degree. The exceptional student can reduce this period two years. Medical students are much alike the world over, and one of their great virtues is their independent spirit, with little respect for tradition or authority. To the medical student Thomas must be the greatest of apostles. Our reception at the medical school by the faculty and the students was most impressive and formal. In reply to some very beautiful eulogies of the United States, Dr. M. with characteristic felicity said that he wished to congratulate the students on the high character and professional attainments of the Faculty of Medicine. There was no student applause. He then said that he wished to congratulate the faculty on the extraordinary fine body of students they had to teach; and although these remarks were in English, the student applause was uproarious and long continued.

The Peruvian Surgical Association, made up of men distinguished in the profession, have their headquarters in a fine building in Lima. The visitor interested in medicine leaves Peru with profound respect for its medical profession.

In the matter of industrial achievement, Peru is one of the most backward of the countries of South America, largely because of the lack of means of communication between the different parts of a country containing about 700,000 square miles of land broken up by great ranges of the Andes mountains. The population, as represented by the upper classes, is refined, intelligent and progressive. Their ideals are essentially those of North America, and they are developing along similar lines. The lower classes are engaged in small agriculture; they are industrious, but, like children, are easily led by noisy political demonstrations.

The bullfight still flourishes in the old ring at Lima, built nearly 200 years ago, but it is not very popular and will soon be abolished. Several surgeons in Lima told me that they had never seen a bullfight. The bullfight has its points of interest to those interested in comparative anatomy, and it requires skill and courage. It is not, however, as exciting or as dangerous to the human participants as football, but, like our North American sports, it permits the multitude a great deal of vicarious exercise on the principle that it is much easier to allow some one else to undergo exertion than to take setting up exercises themselves. There are no public lotteries or open gambling in Peru, but there is little attempt to control the liquor traffic.

Besides the yellow fever, cases of a mild form of bubonic plague are frequently seen in the northern back country; many are "walking cases," and account for the virulent flare-ups which occasionally call public attention to the matter. Such conditions are characteristic of all the countries.

The United States is popular in Peru. Without the protection of the United States it is probable that Peru would have a struggle to maintain her political integrity; the people of Peru are not warlike, in contradistinction to her more aggressive neighbors.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

STERILE SOLUTION OF LUTEIN-H. W. D.—Each Cc. contains the water soluble extractive of 0.2 Gm. of Lutein-H. W. D., freed from protein in physiological solution of sodium chloride.

Actions and Uses.—See general article on Ovary, New and Nonofficial Remedies, 1920, p. 201.

Dosage.—1 Cc. daily, intramuscularly. It is claimed that the solution may be given intravenously with no reaction other than urticaria.

Manufactured by Hynson, Westcott and Dunning, Baltimore. No U. S. patent or trademark.

Ampules Sterile Solution of Lutein-H. W. D.—Each ampule contains more than 1 Cc. sterile solution of lutein-H. W. D.

Sterile solution of lutein-H. W. D. is made by extracting lutein-H. W. D. with a solvent composed of equal parts of alcohol and water. The extract is freed from proteins by addition of lead acetate and subocetate. After removal of the excess of lead, the liquid is freed from alcohol and the concentration adjusted so that each Cc. shall represent the soluble extractive of 0.2 Gm. lutein-H. W. D. in physiological solution of sodium chloride.

OVARIAN RESIDUE-H. W. D.—The residue from the fresh ovaries of the hog after the ablation of the corpus luteum.

Actions and Uses.—Ovarian Residue is used for the same conditions as the entire ovarian substance but is claimed to have the advantage of being somewhat more stable in composition (see general article on Ovary, New and Nonofficial Remedies, 1920, p. 201).

Dosage.—From 0.3 to 0.6 Gm. (5 to 10 grains). Supplied in the form of tablets only (see below).

Manufactured by Hynson, Westcott & Dunning, Baltimore. No U. S. patent or trademark.

Tablets Ovarian Residue-H. W. D. 5 grains.—Each tablet contains ovarian residue-H. W. D. 5 grains.

Ovarian Residue-H. W. D. is a grayish powder, having a characteristic odor. It is prepared from the entire fresh hog ovary by removal by mechanical means of the corpus luteum. The residue is dried and powdered.

MEDICAL EDUCATION IN THE UNITED STATES

ANNUAL PRESENTATION OF EDUCATIONAL DATA FOR 1920 BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

The tabulated statistics herewith presented are for the year ending June 30, 1920, and are based on reports received from the medical colleges or from other reliable sources. We acknowledge here the splendid courtesy and cooperation of the officers of the colleges who have made the compilation of these complete statistics possible.

STATISTICS OF COLLEGES

Table 1, on pages 380-382, gives the colleges in session during 1919-1920; the population of the city; the rating given to the college by the Council on Medical Education and Hospitals; the number of students, men and women, registered during the year; the number of 1920 graduates, men and women; the number of graduates holding collegiate degrees; the number of teachers for each college; the number of weeks of actual work in the college year; the total fees for each year; the executive officer of the college, and the dates of beginning and ending of the next session. The figures in heavy-faced type show the totals by states. Beginning on page 398 are given essential facts concerning all medical colleges arranged by states.

HOME STATES OF MEDICAL STUDENTS

Table 2, on pages 384-385, shows from what state the students came who were in attendance at each medical college during the session of 1919-1920. The influence of the proximity of the medical school is seen in the fact that states having medical colleges contribute more students in proportion to the population than those which have no colleges. This is shown by the dark zone of figures running diagonally down the page. A comparison of this table with the large tables based on state board examinations,[1] which show the distribution of the alumni of each college, is interesting. The college that has widely distributed alumni usually has a student body from an equally large number of states.

The state furnishing the largest number of students this year was New York with 2,138. Illinois contributed 1,059 and Pennsylvania 1,038. The next states, in the order of the number of students contributed, are: Massachusetts, 765; Ohio, 702; California, 519; Texas, 450, and Michigan, 435. Three states had less than 10 each, these being New Mexico, 9; Nevada, 5, and Wyoming, 5. There were 114 students from Hawaii, Porto Rico and the Philippine Islands, and 269 students from foreign countries.

1. THE JOURNAL A. M. A., State Board Number, April 17, 1920, pages 1084 to 1089, inclusive.

NUMBERS OF STUDENTS BY CLASSES

In Table 3, on page 386, the students enrolled in each college are shown by classes. This permits one to see whether the attendance at each college is increasing or decreasing. The total attendance for the first year was 4,234, as compared with 3,104 last year and 4,283 in 1918. The second year attendance was 2,837, as compared with 3,587 last year, and 3,521 in 1918. The third year attendance was 3,464, as compared with 3,272 last year, and 2,893 in 1918. The enrolment of the fourth and fifth (intern) years, combined this year, is 3,553, as compared with 3,089 last year, and 2,933 in 1918. The first, third and fourth (including the fifth) year class enrolments, therefore, show increases, respectively, of 1,130, 92 and 464 over the enrolments in those classes last year. This indicates that the college enrolments have largely been readjusted under the higher entrance requirements and the total enrolments in medical schools are again increasing.

TABLE 4.—MEDICAL COLLEGE ATTENDANCE

Year	Non-sectarian	Homeopathic	Eclectic	Physio-Med.	Nondescript	Total
1880	9,776	1,220	830	...	...	11,826
1890	13,521	1,164	719	...	...	15,404
1900	22,710	1,909	552	...	...	25,171
1901	23,846	1,683	664	80	144	26,417
1902	24,678	1,617	765	91	150	27,301
1903	24,800	1,456	848	149	190	27,615
1904	23,662	1,309	1,014	123	234	28,142
1905	24,119	1,104	578	114	232	26,147
1906	23,116	1,085	644	110	249	25,304
1907	22,302	1,089	545	97	292	24,276
1908	20,936	891	479	99	306	22,602
1909	20,554	869	413	92	227	22,145
1910	20,136	867	455	49	19	21,526
1911	18,414	880	433	49	...	19,786
1912	17,377	827	308	...	...	18,512
1913	15,919	850	256	...	...	17,025
1914	15,438	794	270	...	...	16,502
1915	13,914	738	241	...	...	14,891
1916	13,121	638	263	...	...	14,012
1917	12,925	580	250	...	...	13,764
1918	12,727	540	138	...	225	13,630
1919	12,250	397	86	...	310	13,052
1920	13,220	386	93	...	389	14,088

NUMBER OF MEDICAL STUDENTS

The total number of medical students (Table 4) in the United States for the year ending June 30, 1920, excluding premedical, special and postgraduate students, was 14,088, an increase of 1,036 over last year. This is the largest enrolment of students since 1915. It is noteworthy (Table 12, page 387) that in the high grade (Class A) medical colleges both the number and the percentage of students has increased. Of the total number of students, 13,220 (93.8 per cent.) were in attendance at the nonsectarian (regular) colleges, 386 (2.7 per cent.) at the homeopathic, 93 (0.7 per cent.)

(Continued on page 382)

TABLE 1—STATISTICS OF MEDICAL COLLEGES IN THE UNITED STATES AND CANADA

Marginal Number	NAME AND LOCATION OF COLLEGE	Population of City where College is Located (1920 Census Reports)	Classification by Council on Medical Education	No. of Students Registered 1919-20		Graduates 1920		Grads. with A.B., B.S., or Ph.B.	Number of Teachers	College Weeks in Year	Total Fees (Dollars)				Executive Officer	Session of 1920-21		Marginal Number
				Men	Women	Men	Women				1st year	2d year	3d year	4th year		Begins 1920	Ends 1921	
	ALABAMA																	
1	University of Alabama School of Medicine, Tuscaloosa[1]	11,996	B	51	...	10	...	2										1
	ARKANSAS			51	...	6	...	...										
2	University of Arkansas Medical Department, Little Rock[2]	64,997	A	51	...	6	...	...	16	35	60	60	...	...	Morgan Smith, M.D., Dean	Sept. 20	June 8	2
	CALIFORNIA			468	70	77	13	46										
3	College of Medical Evangelists, Los Angeles	575,480	B	60	12	14	...	13	109	35	217	212	197	207	P. T. Magan, M.D., Dean	Sept. 5	May 26	3
4	College of Physicians and Surgeons, Los Angeles[3]	575,480	B	74	11	12	2	4	...	...	...	...	...	...		.....	.....	4
5	College of Physicians and Surgeons of San Francisco[3]	506,410	C	15	1	15	1	...	...	...	...	...	...	...		.....	.....	5
6	Oakland College of Medicine and Surgery, Oakland[3]	216,261	C	4	1	4	1	...	...	...	...	...	...	...		.....	.....	6
7	Leland Stanford Junior University School of Med., San Francisco	506,410	A	124	13	17	3	19	112	34	186	186	186	186	W. Ophüls, M.D., Dean	Oct. 1	June 17	7
8	University of California Medical School, San Francisco	506,410	A	182	22	15	6	16	199	35	200	155	160	150	L. S. Schmitt, M.D., Secretary	Aug. 16	May 11	8
	COLORADO			66	6	17	...	4										
9	University of Colorado School of Medicine, Denver[4]	256,369	A	66	6	17	...	4	61	34	106	106	98	103	Charles L. Meader, M.D., Dean	Sept. 27	June 13	9
	CONNECTICUT			83	5	17	2	19										
10	Yale University School of Medicine, New Haven	162,390	A	83	5	17	2	19	95	35	205	200	200	210	Milton C. Winternitz, M.D., Dean	Sept. 20	June 22	10
	DISTRICT OF COLUMBIA			339	8	96	1	26										
11	Georgetown University School of Medicine, Washington	437,571	A	139	...	19	...	8	99	34	205	200	200	210	George M. Kober, M.D., Dean	Sept. 24	June 11	11
12	George Washington University Medical School, Washington	437,571	A	160	5	21	...	3	95	34	200	200	200	200	W. C. Borden, M.D., Dean	Sept. 29	June 8	12
13	Howard University School of Medicine, Washington	437,571	A	110	3	26	1	15	39	33	165	155	155	162	Edward A. Balloch, M.D., Dean	Oct. 1	June 10	13
	GEORGIA			236	...	43	...	6										
14	Emory University School of Medicine, Atlanta	200,616	A	174	...	28	...	4	98	34	172	160	165	180	W. S. Elkins, M.D., Dean	Sept. 21	June 6	14
15	University of Georgia Medical Department, Augusta[4]	52,548	A	64	...	15	...	2	46	34	65	60	60	60	W. H. Doughty, Jr., M.D., Dean	Sept. 15	May 30	15
	ILLINOIS			1578	112	306	12	224										
16	Chicago Medical School, Chicago[5]	2,701,212	C	89	...	15	...	...	...	...	180	180	180	205	J. L. Kendall, Jr., M.D.	Oct. 4	.....	16
17	Hahnemann Medical College and Hospital of Chicago.—H.	2,701,212	B	45	3	9	1	5	92	34	176	162	177	192	Joseph P. Cobb, M.D., Dean	Sept. 28	June 10	17
18	Loyola University School of Medicine, Chicago	2,701,212	A	168	16	23	...	...	115	34	165	165	165	185	Rev. P. J. Mahan, Regent	Oct. 1	June 15	18
19	Northwestern University Medical School, Chicago	2,701,212	A	466	...	73	...	39	172	33	210	206	198	190	Arthur I. Kendall, M.D., Dean	Oct. 5	June 11	19
20	Rush Medical College (University of Chicago)	2,701,212	A	560	74	108	7	106	304	34	230	235	225	235	John M. Dodson, M.D., Dean	Oct. 1	June 15	20
21	University of Illinois College of Medicine, Chicago	2,701,212	A	251	19	61	4	74	154	34	165	160	150	165	A. C. Eycleshymer, M.D., Dean	Sept. 28	June 10	21
	INDIANA			221	13	46	2	46										
22	Indiana University School of Medicine, Indianapolis	314,194	A	221	13	46	2	46	151	35	125	125	150	150	Charles P. Emerson, M.D., Dean	Sept. 13	June 8	22
	IOWA			224	8	52	1	22										
23	State University of Iowa College of Medicine, Iowa City[4]	11,267	A	224	8	52	1	22	56	35	85	85	85	85	Lee Wallace Dean, M.D., Dean	Sept. 23	June 14	23
	KANSAS			126	7	20	3	14										
24	University of Kansas School of Medicine, Rosedale-Kansas City[4]	404,782	A	126	7	20	3	14	73	35	111	111	103	103	M. T. Sudler, M.D., Assoc. Dean	Sept. 13	June 8	24
	KENTUCKY			126	6	22	3	6										
25	University of Louisville Medical Department, Louisville	234,891	A	126	6	22	3	6	119	35	200	200	200	200	Henry Enos Tuley, M.D. Dean	Sept. 21	June 2	25
	LOUISIANA			311	14	51	...	24										
26	Tulane University of Louisiana School of Medicine, New Orleans	387,408	A	311	14	51	...	24	131	32	200	225	215	245	Isadore Dyer, M.D., Dean	Sept. 27	June 8	26
	MAINE			43	...	10	...	7										
27	Bowdoin Medical School, Brunswick-Portland	69,196	A	43	...	10	...	7	58	34	150	150	150	150	Addison S. Thayer, M.D., Dean	Oct. 7	June 22	27
	MARYLAND			573	61	140	12	66										
28	Johns Hopkins University Medical Department, Baltimore	733,826	A	330	60	81	12	66	185	35	267	267	267	267	J. Whitridge Williams, M.D., Dean	Sept. 28	June 21	28
29	Univ. of Maryland Sch. of Med. and Coll. of P. & S., Baltimore	733,826	A	243	1	59	...	...	164	32	215	215	215	215	J. M. M. Rowland, M.D., Dean	Oct. 1	June 1	29
	MASSACHUSETTS			1095	85	186	19	167										
30	Boston University School of Medicine, Boston	747,923	A	78	15	9	4	12	67	33	175	162	160	190	John P. Sutherland, M.D., Dean	Oct. 1	June 15	30
31	College of Physicians and Surgeons, Boston[4]	747,923	C	28	4	8	1	...	...	...	115	140	150	125	.....	.....	.....	31
32	Medical School of Harvard University, Boston	747,923	A	413	...	96	...	67	222	35	230	225	225	225	David L. Edsall, M.D., Dean	Sept. 27	June 22	32
33	Tufts College Medical School, Boston	747,923	A	302	36	69	14	8	117	36	211	196	186	191	Charles P. Painter, M.D., Dean	Sept. 16	June 30	33
34	Middlesex College of Medicine and Surgery, Cambridge.—H.[4]	109,456	C	189	...	14	...	...	...	...	150	150	150	150	.....	.....	.....	34
	MICHIGAN			625	34	116	5	45										
35	University of Michigan Medical School, Ann Arbor[4]	19,516	A	361	28	70	5	39	87	35	140	140	140	140	C. W. Edmunds, M.D., Asst. Dean	Oct. 5	June 30	35
36	University of Michigan Homeopathic Med. School, Ann Arbor.—H.	19,516	A	26	2	7	...	2	26	35	140	140	140	140	W. B. Hinsdale, M.D., Dean	Oct. 5	June 30	36
37	Detroit College of Medicine and Surgery, Detroit	993,739	A	238	4	41	...	3	209	35	150	150	150	150	W. H. MacCraken, M.D., Dean	Sept. 27	June 16	37
	MINNESOTA			353	15	60	...	55										
38	University of Minnesota Medical School, Minneapolis[4]	380,582	A	353	15	60	...	55	140	35	186	186	186	186	Elias P. Lyon, M.D., Dean	Sept. 29	June 20	38
	MISSISSIPPI			49	2	...	...	...										
39	University of Mississippi School of Medicine, Oxford[4]	1,049	A	49	2	...	...	...	16	34	133	133	. .	...	W. S. Leathers, M.D., Dean	Sept. 15	May 31	39

	MISSOURI			397	26	221	7	26											
40	University of Missouri School of Medicine, Columbia[4] [4].....	10,681	A	63	6	...	...	...	27	32	80	86	...	...	Guy L. Noyes, M.D., Dean.....	Aug. 30	April 27	40
41	Kansas City College of Medicine and Surgery, Kansas City.—N.[5]...	404,782	C	127	40	1	...	...	...	...	200	200	200	200	D. R. Alexander, M.D., Dean.....	.....	.....	41
42	Kansas City Univ. of Physicians and Surgeons, Kansas City.—N.[5]...	404,782	C	62	9	23	6	...	...	...	150	150	150	165	A. L. McKenzie, D.O., President.....	.....	.....	42
43	St. Louis College of Physicians and Surgeons, St. Louis.....	772,897	C	144	...	42	...	...	...	...	145	140	140	140	Waldo Briggs, M.D.	.....	.....	43
44	St. Louis University School of Medicine, St. Louis.....	772,897	A	251	...	63	...	6	152	32	200	200	200	200	Hanau W. Loeb, M.D., Dean.....	Oct. 1	May 31	44
45	Washington University School of Medicine, St. Louis.....	772,897	A	150	4	43	...	31	129	33	221	216	216	221	Nathaniel Allison, M.D., Dean.....	Sept. 22	June 9	45
	NEBRASKA			272	11	63	2	46											
46	John A. Creighton Medical College, Omaha.....	191,601	A	98	1	23	...	13	56	34	175	165	165	170	H. Von W. Schulte, M.D., Dean.....	Sept. 20	June 4	46
47	University of Nebraska College of Medicine, Omaha.....	191,601	A	174	10	40	2	27	88	34	140	120	110	110	Irving S. Cutter, M.D., Dean.....	Sept. 17	June 4	47
	NEW HAMPSHIRE			21	...	...	...	...											
48	Dartmouth Medical School, Hanover[6].....	2,075	A	21	...	...	...	...	12	36	200	200	...	...	John M. Gile, M.D., Dean.....	Sept. 23	June 22	48
	NEW YORK			2024	136	519	23	169											
49	Albany Medical College, Albany.....	113,344	A	78	1	21	0	3	67	35	225	200	200	200	Thomas Ordway, M.D., Dean.....	Sept. 20	June 13	49
50	University of Buffalo Medical Department, Buffalo.....	505,875	A	196	15	54	3	4	112	33	245	240	240	240	C. Sumner Jones, M.D., Dean.....	Sept. 20	June 3	50
51	Columbia University College of Phys. and Surgs., New York City..	5,021,151	A	300	29	101	...	72	279	33	250	250	332	352	William Darrach, M.D., Dean.....	Sept. 22	June 1	51
52	Cornell University Medical College, New York City.....	5,021,151	A	206	54	37	14	51	152	33	240	235	235	250	Walter L. Niles, M.D., Dean.....	Sept. 27	June 9	52
53	Fordham University School of Medicine, New York City[10].....	5,021,151	A	118	...	54	...	4	76	35	...	...	...	310	Rev. John A. Ryan, Regent.....	Sept. 24	June 15	53
54	Long Island College Hospital, Brooklyn.....	5,021,151	A	327	13	74	2	4	134	32	250	250	250	350	Otto V. Huffman, M.D., Dean.....	Sept. 27	May 31	54
55	New York Homeopathic Med. Coll. and Flower Hospital.—E.....	5,021,151	B	134	8	40	2	1	61	33	250	245	220	220	Milton J. Reisbeck, M.D., Registrar.....	Sept. 6	May 13	55
56	University and Bellevue Hospital Medical College, New York City..	5,021,151	A	455	10	103	1	8	171	35	270	270	270	295	Samuel A. Brown, M.D., Dean.....	Sept. 15	June 7	56
57	Syracuse University College of Medicine, Syracuse.....	171,647	A	141	6	35	1	22	101	35	217	217	217	227	John L. Heffron, M.D., Dean.....	Sept. 14	June 8	57
	NORTH CAROLINA			104	3	...	...	...											
58	University of North Carolina School of Medicine, Chapel Hill[4].....	1,149	A	59	3	...	...	...	24	34	150	150	...	...	I. H. Manning, M.D., Dean.....	Sept. 22	June 10	58
59	Wake Forest College School of Medicine, Wake Forest[4].....	1,443	A	45	...	...	...	...	10	34	120	120	...	...	E. B. Earnshaw, Secretary.....	Sept. 7	May 27	59
	NORTH DAKOTA			29	2	...	...	...											
60	Univ. of North Dakota School of Med., University (Grand Forks)[6].	13,950	A	29	2	...	...	...	15	35	85	85	...	...	H. E. French, M.D., Dean.....	Sept. 20	June 14	60
	OHIO			636	32	143	5	60											
61	Eclectic Medical College, Cincinnati.—E.....	401,247	B	90	3	30	2	3	39	32	160	150	150	150	John K. Scudder, M.D., Secretary.....	Sept. 16	May 16	61
62	University of Cincinnati College of Medicine.....	401,247	A	200	12	42	2	31	176	34	200	210	180	180	J. C. Oliver, M.D., Acting Dean.....	Oct. 5	June 18	62
63	Western Reserve University School of Medicine, Cleveland.....	796,836	A	175	3	48	...	47	120	34	225	210	204	205	Carl A. Hamann, M.D., Dean.....	Sept. 30	June 16	63
64	Ohio State University College of Medicine, Columbus[4].....	237,031	A	141	9	22	1	9	91	36	152	152	152	152	F. P. McCampbell, M.D., Dean.....	Sept. 14	June 14	64
65	Ohio State University College of Homeo. Medicine, Columbus.—H.[4]	237,031	B	21	5	1	...	...	21	36	152	152	152	152	Claude A. Burrett, M.D., Dean.....	Sept. 14	June 14	65
	OKLAHOMA			80	6	14	1	10											
66	University of Oklahoma School of Med., Norman-Oklahoma City...	91,258	A	80	6	14	1	10	66	35	70	40	40	45	Leroy Long, M.D., Dean.....	Sept. 16	June 7	66
	OREGON			62	11	13	1	5											
67	University of Oregon Medical School, Portland.....	258,288	A	62	11	13	1	5	104	32	165	160	160	160	Richard B. Dillehunt, M.D., Dean.....	Oct. 1	May 31	67
	PENNSYLVANIA			1333	123	394	16	125											
68	Hahnemann Medical College and Hospital of Philadelphia.—H.	1,823,158	A	130	...	37	...	3	95	32	230	232	232	250	William A. Pearson, M.D., Dean.....	Sept. 27	May 31	68
69	Jefferson Medical College of Philadelphia.....	1,823,158	A	522	...	165	...	28	167	34	325	320	320	320	Ross V. Patterson, M.D., Dean.....	Sept. 22	June 4	69
70	Temple University Department of Medicine, Philadelphia.....	1,823,158	C	113	1	23	...	...	102	33	175	171	160	170	Frank C. Hammond, M.D., Dean.....	Sept. 30	June 1	70
71	University of Pennsylvania School of Medicine, Philadelphia.....	1,823,158	A	428	26	128	3	60	210	34	343	330	320	324	William Pepper, M.D., Dean.....	Sept. 24	June 15	71
72	Woman's Medical College of Pennsylvania, Philadelphia.....	1,823,158	A	.....	89	...	12	10	60	32	198	202	184	189	Martha Tracy, M.D., Dean.....	Sept. 29	June 15	72
73	University of Pittsburgh School of Medicine, Pittsburgh.....	588,193	A	140	7	31	...	24	130	33	310	310	310	310	Raleigh R. Huggins, M.D., Dean.....	Sept. 27	June 15	73
	SOUTH CAROLINA			62	3	14	...	5											
74	Medical College of the State of South Carolina, Charleston.....	60,734	A	62	3	14	...	5	65	33	150	150	150	150	Robert Wilson, M.D., Dean.....	Sept. 24	June 2	74
	SOUTH DAKOTA			22	1	...	...	...											
75	University of South Dakota College of Medicine, Vermillion[6].....	2,590	A	22	1	...	...	...	8	35	60	60	...	...	C. P. Lommen, M.D., Dean.....	Sept. 27	June 25	75
	TENNESSEE			362	5	63	1	26											
76	University of Tennessee College of Medicine, Memphis[4].....	162,351	A	48	2	14	1	6	107	33	107	102	102	127	Melver Woody, M.D., Dean.....	Sept. 25	June 7	76
77	University of West Tennessee Medical Department, Memphis.....	162,351	C	10	...	1	...	...	...	...	80	80	80	90	M. V. Lynk, M.D., Dean.....	.....	.....	77
78	Meharry Medical College, Nashville.....	118,342	B	182	3	39	...	18	30	30	87	87	87	97	G. W. Hubbard, M.D., President.....	Oct. 5	May 19	78
79	Vanderbilt University School of Medicine, Nashville.....	118,342	A	122	...	29	...	2	79	33	160	160	160	185	G. Canby Robinson, M.D., Dean.....	Sept. 27	June 8	79
	TEXAS			236	22	86	5	30											
80	Baylor University College of Medicine, Dallas.....	158,976	A	137	4	35	...	9	54	32	165	160	160	150	Edward H. Cary, M.D., Dean.....	Sept. 27	May 26	80
81	University of Texas Department of Medicine, Galveston[6].....	41,863	A	201	18	62	5	21	42	32	78	48	31	21	W. S. Carter, M.D., Dean.....	Oct. 1	May 31	81
	UTAH			35	1	...	...	...											
82	University of Utah School of Medicine, Salt Lake City[4].....	118,110	A	35	1	...	...	...	24	33	110	110	...	...	Perry G. Snow, M.D., Dean.....	Sept. 28	June 5	82
	VERMONT			103	...	22	...	2											
83	University of Vermont College of Medicine, Burlington.....	22,779	A	103	...	22	...	2	45	35	145	145	145	170	H. C. Tinkham, M.D., Dean.....	Sept. 22	June 20	83

F., Eclectic; H., Homeopathic; N., Nondescript.

* Gives only the first two years of the medical course.

1. This school has just been moved from Mobile to Tuscaloosa and clinical teaching has been suspended.

2. This school has just been suspended.

3. These two colleges ceased medical teaching in 1918, but retain a nominal existence until 1921 in order to grant degrees to the three remaining classes which are being taught elsewhere.

4. The following state universities make an additional charge for students who are nonresidents, as follows: Colorado, $30; Georgia, $60; Iowa, $15; Kansas, $10; Michigan, $25; Minnesota, $30; Missouri, $10; Ohio, $50; Tennessee, $50; Texas, $150; West Virginia, $30.

5. This was formerly the Chicago Hospital College of Medicine.

6. Figures for enrolment, approximate; graduates, exact.

7. Figures are as reported regarding students and graduates. They have not been verified.

8. Figures for enrolment, approximate; graduates, exact.

9. Formerly the Central College of Osteopathy. Reported to be conducting both osteopathic and medical courses.

10. Ordered closed by trustees in 1919. Has continued for two years until two remaining classes are graduated. Will permanently close in 1921.

(Continued from page 379)

at the eclectic, and 389 (2.8 per cent.) were enrolled in three nondescript colleges. These three colleges consist of two semi-osteopathic and one nominally eclectic affair. Two of them are outlawed in their home state—Missouri—and one is in Massachusetts, which has a feeble medical practice law. None of them, therefore, is subject to rigid laws or regulations. One of them, the Kansas City College of Medicine and Surgery, exists only by the enjoyment of special privileges obtained through a sectarian licensing board in an adjoining state, the Eclectic Board of Arkansas, even though it is disowned as an eclectic college by the National Eclectic Medical Association.

NUMBER OF MEDICAL GRADUATES

The total number of graduates for the year ending June 30, 1920, was 3,047, an increase of 391 over 1919. The number of graduates from the nonsectarian colleges was 2,826, or 403 more than last year. The number from the homeopathic colleges was 97, or 8 more than last year, and from the eclectic colleges there were 30 graduates, or 2 more than last year. The three nondescript colleges had 94 graduates, or 22 less than last year.

TABLE 5.—MEDICAL COLLEGE GRADUATES

Year	Non-sectarian	Homeopathic	Eclectic	Physio-Med.	Nondescript	Total
1880	2,673	280	288	..	..	3,241
1890	3,853	280	271	..	..	4,404
1900	4,715	413	86	..	..	5,214
1901	4,879	387	148	12	12	5,446
1902	4,508	326	138	16	11	5,099
1903	5,098	420	140	24	17	5,699
1904	5,190	371	146	29	20	5,747
1905	5,126	276	135	12	23	5,600
1906	4,841	288	126	12	19	5,284
1907	4,591	225	121	11	22	4,970
1908	4,270	215	156	12	28	4,741
1909	4,163	220	84	15	44	4,515
1910	4,113	183	114	16	14	4,440
1911	4,008	152	110	6	..	4,276
1912	4,208	185	92	..	..	4,485
1913	3,679	200	81	..	..	3,961
1914	3,370	154	70	..	..	3,594
1915	3,288	195	65	..	..	3,548
1916	3,274	168	78	..	..	3,520
1917	3,134	180	66	..	..	3,379
1918	2,454	114	61	..	60	2,679
1919	2,423	89	18	116	2,656
1920	2,826	97	30	..	94	3,047

last four years only are shown. Enrolments include students of all years.

TABLE 1—STATISTICS OF MEDICAL COLLEGES IN THE UNITED STATES AND CANADA—(Concluded)

Marginal Number	NAME AND LOCATION OF COLLEGE	Population of City where College is Located (1920 Census or as Reported)	Classification by Council on Medical Education	No. of Students Enrolled 1919-20 Men	No. of Students Enrolled 1919-20 Women	Grad-uates 1920 Men	Grad-uates 1920 Women	Grads. with A.B., or Ph.B.	Number of Teachers	Weeks in College Year	Total Fees (Dollars) 1st year	Total Fees (Dollars) 2d year	Total Fees (Dollars) 3d year	Total Fees (Dollars) 4th year	Executive Officer	Session of 1920-21 Begins 1920	Session of 1920-21 Ends 1921	Marginal Number
	VIRGINIA																	
84	Medical College of Virginia, Richmond	156,667	A	294	6	80	1	19	112	34	310	310	310	310	F. C. L. Miller, M.D., Dean	Sept. 15	June 5	84
85	University of Virginia Department of Medicine, Charlottesville	10,688	A	128	0	35	..	9	45	35	250	250	250	250	Theodore Hough, M.D., Dean	Sept. 16	June 15	85
	WEST VIRGINIA																	
86	West Virginia University School of Medicine, Morgantown[a]	12,117	A	52	2	..	..	2	16	35	80	..	..	..	John N. Simpson, M.D., Dean	Sept. 30	June 15	86
	WISCONSIN																	
87	University of Wisconsin Medical School, Madison[a]	38,378	A	155	15	45	..	..	65	35	104	97	..	..	Chas. R. Bardeen, M.D., Dean	Sept. 23	June 17	87
88	Marquette University School of Medicine, Milwaukee	457,147	A	162	1	58	..	2	79	34	250	250	250	250	Louis F. Jermain, M.D., Dean	Oct. 1	June 14	88
	CANADA [11]			2827	198	583	6	80										
89	University of Alberta Faculty of Medicine, Edmonton, Alta.	6,979	B	115	13	..	..	..	20	30	150	150	..	..	Cecil K. Bass, Registrar	Sept. 27	May 12	89
90	Dalhousie University Faculty of Medicine, Halifax, N. S.	46,619	B	139	13	..	..	..	40	32	140	140	..	..	John Stewart, M.D., Dean	Sept. 29	May 25	90
91	Queen's University Faculty of Medicine, Kingston, Ont.	18,874	B	239	..	71	..	..	50	32	143	144	134	134	J. C. Connell, M.D., Dean	Sept. 29	May 31	91
92	University of Toronto Faculty of Medicine, Toronto, Ont.	376,538	B	1092	80	270	..	4	271	32	160	160	160	160	A. Primrose, M.D., Acting Dean	Oct. 4	May 26	92
93	Western University Faculty of Medicine, London, Ont.	60,380	B	219	12	52	..	..	25	32	167	167	167	167	Fred McKibbon, M.D., Acting Dean	Oct. 4	May 26	93
94	McGill University Faculty of Medicine, Montreal, Que.	618,506	A	619	..	155	..	13	155	34	135	135	135	145	John W. Scane, M.D., Registrar	Oct. 1	June 25	94
95	Bishop's University Faculty of Medicine, Montreal, Que.	470,480	A	267	..	..	..	..	60	34	135	135	135	145	Louis Daniel Mignault, M.D., Secretary	Oct. 1	June 25	95
96	Laval University Faculty of Medicine, Quebec, Que.	78,190	B	149	..	35	..	..	35	36	135	135	135	145	Edwin Turcot, M.D., Dean	Sept. 14	June 15	96
97	University of Manitoba Faculty of Medicine, Winnipeg	136,035	B	196	23	53	2	..	60	39	160	160	170	160	S. Willis Prowse, M.D., Dean	..	..	97

E, Eclectic; H., Homeopathic; N., Nondescript.

[a] Gives only the first two years of the medical course.

11. The Canadian schools count the one or two years devoted to premedical sciences as a part of the medical course. The fees for the year.

colleges not one was reported as holding a bachelor's degree in arts or science. As will be noted by referring to Table 11, of the 1,321 graduates holding baccalaureate degrees, 224—the largest number—came as last year from the Illinois colleges. New York had 168 graduates this year holding baccalaureate degrees, followed by Pennsylvania with 125 and Massachusetts with 114. The percentage of graduates holding collegiate degrees should continue to increase, since all the better medical schools are now requiring two years of college work for admission, which brings more students in reach of the combined course for the B.S. and M.D. degrees.

TABLE 6.—MEDICAL GRADUATES WITH LIBERAL ARTS DEGREES

Year	Nonsectarian			Homeopathic			Eclectic			Totals		
	Graduates	A.B., B.S.	Per Cent.	Graduates	A.B., B.S.	Per Cent.	Graduates	A.B., B.S.	Per Cent.	Graduates	A.B., B.S.	Per Cent.
1910.....	4,113	664	16.1	183	13	7.1	114	3	2.6	4,440	680	15.3
1911.....	4,006	682	17.0	152	18	11.8	110	4	3.6	4,273	705	16.5
1912.....	4,206	744	17.7	185	15	8.1	92	4	4.3	4,483	763	17.0
1913.....	3,679	732	19.9	209	20	9.6	93	1	1.1	3,981	753	18.9
1914.....	3,570	794	22.5	154	7	4.5	70	6	8.6	3,794	807	22.5
1915.....	3,288	839	25.5	196	16	8.2	55	3	5.5	3,539	858	24.3
1916.....	3,274	928	28.3	166	20	12.0	78	.....	.....	3,518	948	26.9
1917.....	3,134	1078	34.4	180	19	10.5	65	2	3.1	3,379	1099	32.5
1918*.....	2,454	1007	41.0	114	15	13.2	60	.....	.....	2,670	1024	38.4
1919*.....	2,423	1162	48.0	89	16	18.0	29	2	7.1	2,656	1180	44.4
1920.....	2,895	1307	46.2	97	11	11.3	30	3	10.0	3,043	1321	43.5

* No graduates of nondescript colleges during the last three years were reported to have collegiate degrees.

TABLE 7.—WOMEN IN MEDICINE

Year	Total Women Students	Percentage of All students, Both Sexes	Total Women Graduates	Percentage of Graduates, Both Sexes	Women's Colleges	Students	Percentage of Women Students	All	Graduates	Percentage of Women Graduates	All	Co-ed. Schools	Students	Percentage of Women Students	All	Graduates	Percentage of Women Graduates	All
1904	1,179	4.3	244	4.0	3	183	16.2	56	23.0	97		946	83.8	198		77.0		
1905	1,073	4.1	219	4.0	3	221	20.6	54	24.5	98		852	79.4	165		75.5		
1906	985	3.5	238	4.3	3	189	21.0	53	14.1	99		796	79.0	200		85.9		
1907	928	3.3	211	4.2	3	210	22.6	39	18.5	86		718	77.4	172		81.5		
1908	835	3.7	185	3.9	3	186	22.3	46	24.9	88		649	77.7	139		75.1		
1909	921	4.2	162	3.7	3	169	18.4	32	20.3	91		752	81.6	129		79.7		
1910	907	4.3	157	3.5	3	155	17.1	41	26.1	82		752	82.9	116		73.9		
1911	880	4.4	159	3.7	3	134	15.2	30	17.6	74		746	80.8	123		77.4		
1912	679	3.2	142	3.2	2	143	21.1	32	22.5	64		536	78.9	110		77.5		
1913	640	3.3	154	3.5	2	138	21.6	33	21.4	55		502	78.4	121		78.6		
1914	631	3.5	121	3.4	2	125	21.4	25	20.7	54		493	78.6	96		79.3		
1915	627	3.8	129	3.7	2	116	19.6	28	29.5	54		462	80.4	70		70.5		
1916	606	4.0	134	3.8	2	102	18.0	23	20.0	31		464	82.0	105		80.0		
1917	610	4.5	153	4.5	2	81	13.3	29	18.9	56		529	86.7	124		81.1		
1918	581	4.8	108	4.0	2	70	12.0	12	11.3	60		511	87.9	94		88.7		
1919	696	5.2	157	4.9	1	66	10.0	7	4.5	59		630	90.4	150		95.4		
1920	818	5.8	134	4.4	1	89	10.9	12	9.0	64		727	90.1	122		91.0		

WOMEN IN MEDICINE

During the past year there were 818 women studying medicine, or 132 more than last year, and 237 more than in 1918. The percentage of women to all medical students this year is 5.8, the largest percentage since the presenting of these statistics was begun. There were 134 women graduates this year, 27 more than last year, but 19 less than in 1917. Of all the women matriculants, 89 were in attendance at the one medical college for women, while 727 (90.1 per cent.) were matriculated in the 64 coeducational colleges. From the one women's college there were 12 graduates, while 122 (91.0 per cent.) secured their degrees from coeducational colleges. This increase of women students in coeducational colleges is not surprising, since in recent years some of the largest and oldest medical schools, as Columbia, Tulane, the University of Pennsylvania, Harvard and Western Reserve University, have thrown open their doors to women.

NUMBER OF COLLEGES

Since June 30, 1919, one college, the College of Physicians and Surgeons of the University of Southern California, was closed, and Fordham University School of Medicine was temporarily reopened, leaving 85 still existing. Of these, 76 are nonsectarian (regular), 5 are homeopathic, 1 is eclectic and 3 are nondescript. Two of the nondescript colleges are not recognized by the licensing board of Missouri, the state in which they are located.

TABLE 8.—MEDICAL COLLEGES

Year	Nonsectarian	Homeopathic	Eclectic	Physio-Med.	Nondescript	Total
1850.....	44	3	4	1	..	52
1860.....	53	6	4	2	..	65
1870.....	60	8	5	2	..	75
1880.....	76	14	8	2	..	100
1890.....	106	16	9	2	..	133
1900.....	126	22	9	2	1	160
1901.....	125	22	10	2	1	160
1902.....	126	20	9	3	2	160
1903.....	126	20	9	3	2	160
1904.....	127	19	9	3	2	160
1905.....	125	19	9	3	2	158
1906.....	130	19	8	3	2	162
1907.....	127	18	9	3	2	159
1908.....	120	18	9	2	2	151
1909.....	115	15	8	1	1	140
1910.....	109	12	8	1	1	131
1911.....	103	12	7	..	..	122
1912.....	101	11	6	..	..	118
1913.....	92	10	5	..	..	107
1914.....	87	10	5	..	..	102
1915.....	83	9	4	..	..	96
1916.....	82	10	3	..	..	95
1917.....	83	9	4	..	..	96
1918.....	79	6	2	..	3	90
1919.....	76	5	1	..	3	85
1920.....	76	5	1	..	3	85

TABLE 9.—COLLEGE TERMS

Year	21 to 26 weeks		27 to 28 weeks		29 to 30 weeks		31 to 32 weeks		33 to 34 weeks		35 to 36 weeks		Over 36 weeks	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1901	56	30.5	42	28.4	8	5.0	26	16.4	4	2.5	18	11.3	3	1.9
1902	44	28.4	44	28.4	11	7.1	33	21.3	3	1.9	18	11.6	2	1.3
1903	33	21.4	46	29.9	15	9.7	37	24.0	2	1.3	19	12.4	2	1.3
1904	27	16.3	44	26.5	22	13.3	37	22.3	13	7.8	20	12.0	3	1.8
1905	15	9.4	35	21.8	12	7.5	44	27.5	13	8.1	23	14.3	3	1.8
1906	14	8.7	35	21.7	26	16.1	32	19.9	24	14.9	24	17.4	2	1.3
1907	6	3.7	27	16.8	26	16.1	42	26.1	29	18.0	29	18.0	2	1.3
1908	2	1.3	21	13.8	28	18.4	51	33.6	24	15.8	22	14.5	4	2.6
1909	4	2.3	17	11.6	23	16.4	51	34.9	18	12.3	30	20.5	3	2.0
1910	2	1.5	8	6.0	19	14.2	42	31.5	30	22.6	30	22.6	2	1.5
1911	..	....	6	5.0	16	13.3	37	30.8	32	26.7	28	23.4	1	0.8
1912	1	0.9	1	0.9	11	9.5	34	29.3	37	31.8	31	26.7	1	0.9
1913	..	....	3	2.8	5	4.7	29	27.4	41	38.7	27	25.5	1	0.9
1914	..	....	2	2.0	4	4.0	25	24.8	41	40.5	28	27.7	1	1.0
1915	..	....	1	1.0	5	5.3	22	23.2	36	37.9	30	31.6	1	1.0
1916	..	....	..	....	4	4.2	17	17.9	43	45.3	28	29.5	..	....
1917	..	....	..	....	1	1.0	15	15.6	46	47.9	31	32.3	..	....
1918*	..	....	..	....	2	2.2	23	25.6	37	41.1	22	24.4	..	....
1919*	..	....	..	....	1	1.2	11	12.9	44	51.8	23	27.1	1	1.2
1920	..	....	..	....	1	1.2	10	11.8	38	44.7	29	34.1		

* Information not furnished by six Class C colleges during the last three years.

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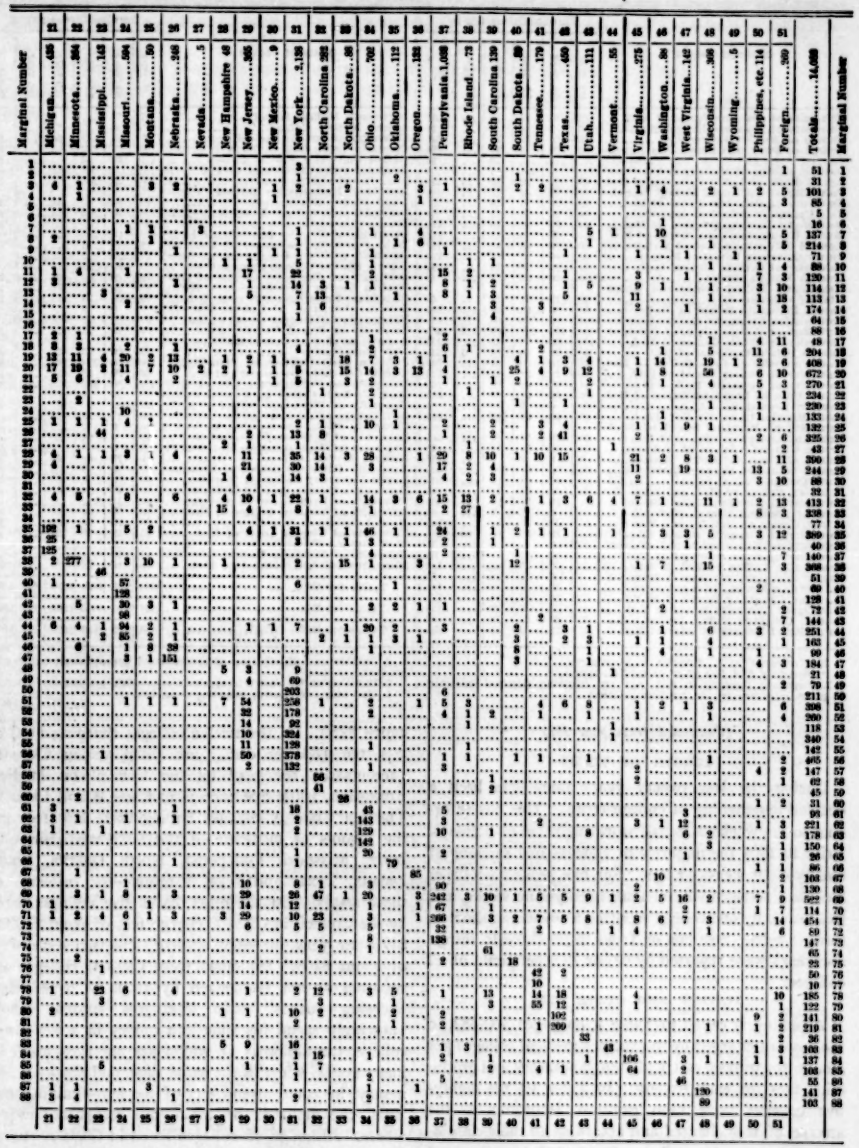
Marginal Number	NAME OF COLLEGE	1 Alabama.....178	2 Arizona.....11	3 Arkansas.....80	4 California.....519	5 Colorado.....128	6 Connecticut.....284	7 Delaware.....35	8 Dist. of Col.....88	9 Florida.....32	10 Georgia.....273	11 Idaho.....32	12 Illinois.....1,009	13 Indiana.....289	14 Iowa.....264	15 Kansas.....250	16 Kentucky.....138	17 Louisiana.....144	18 Maine.....84	19 Maryland.....176	20 Massachusetts..765	Marginal Number
1	University of Alabama School of Medicine	45	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	1
2	University of Arkansas Medical Department	...	...	24	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
3	College of Medical Evangelists	...	2	...	42	5	...	...	2	1	...	1	2	...	...	4	...	...	...	3	1	3
4	College of Physicians and Surgeons, Los Angeles	...	...	...	77	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	4
5	Oakland College of Medicine and Surgery	...	...	...	5	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
6	College of Physicians and Surgeons of San Francisco	...	...	...	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
7	Leland Stanford Junior Univ., School of Medicine*	...	1	...	93	5	...	...	1	...	2	...	1	1	...	...	...	1	...	...	...	7
8	University of California Medical School	...	...	...	196	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	8
9	University of Colorado School of Medicine	...	...	...	...	59	...	...	...	1	1	...	...	...	1	1	...	...	...	...	...	9
10	Yale University School of Medicine	...	...	...	...	...	66	...	...	...	1	...	...	...	...	...	...	...	...	1	2	10
11	Georgetown University School of Medicine	...	...	...	...	...	3	...	18	...	...	...	...	2	2	...	...	1	2	4	9	11
12	George Washington University Medical School	...	...	...	1	1	4	1	32	...	2	...	2	...	...	1	...	1	...	3	1	12
13	Howard University School of Medicine	4	...	1	...	...	...	...	16	2	...	...	1	...	...	...	4	2	...	6	...	13
14	Emory University School of Medicine	21	...	...	...	...	...	...	...	5	123	...	...	...	2	...	2	...	...	...	...	14
15	University of Georgia Medical Department	...	...	...	...	...	...	...	...	...	59	...	...	...	...	...	...	...	...	...	...	15
16	Chicago Medical School	...	...	...	...	...	...	...	...	...	...	...	88	...	...	...	...	...	...	...	...	16
17	Hahnemann Medical College and Hospital of Chicago	1	...	1	...	...	...	...	...	...	...	...	13	6	3	1	1	...	...	...	...	17
18	Loyola University School of Medicine	...	...	...	...	1	1	...	...	...	1	...	135	4	5	2	1	...	...	...	2	18
19	Northwestern University Medical School	2	1	3	2	8	...	...	1	1	5	185	14	22	11	...	...	...	...	...	1	19
20	Rush Medical College (University of Chicago)	1	...	2	8	10	...	...	1	2	...	5	277	32	41	31	3	1	1	...	...	20
21	University of Illinois College of Medicine	1	1	...	3	3	...	...	...	...	...	...	192	7	14	1	1	...	...	...	...	21
22	Indiana University School of Medicine	...	...	...	...	...	...	...	...	...	...	...	3	223	...	...	1	...	...	...	...	22
23	State University of Iowa College of Medicine	...	...	...	1	...	...	...	...	...	...	1	1	...	219	...	...	...	...	...	...	23
24	University of Kansas School of Medicine	...	...	...	...	...	...	...	...	...	...	...	...	1	119	...	...	...	...	...	...	24
25	University of Louisville Medical Department	4	...	5	1	...	...	...	...	2	1	2	6	18	2	1	43	1	...	...	1	25
26	Tulane University of Louisiana School of Medicine	48	1	13	3	1	...	...	...	11	10	...	...	1	...	1	...	173	...	...	...	26
27	Bowdoin Medical School	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	27	...	3	27
28	Johns Hopkins University, Medical Department	3	...	2	10	5	13	2	6	2	14	...	6	5	4	1	8	2	4	68	10	28
29	Univ. of Maryland Sch. of Med. & Co. of P. and S.	1	...	...	...	...	13	6	...	2	...	...	...	...	...	...	3	...	...	74	2	29
30	Boston University School of Medicine	1	...	...	1	...	3	1	...	1	2	...	...	...	...	1	...	...	1	...	31	30
31	College of Physicians and Surgeons, Boston †	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	32	31
32	Medical College of Harvard University	4	...	...	8	7	17	...	3	2	11	1	9	4	1	2	...	...	16	1	164	32
33	Tufts College Medical School	...	...	...	...	...	10	...	1	...	...	...	...	...	...	...	...	...	7	...	252	33
34	Middlesex College of Medicine and Surgery.—N.*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	189	34
35	University of Michigan Medical School	...	1	1	2	3	4	...	1	1	1	...	10	10	1	1	2	...	...	1	3	35
36	University of Michigan Homeo. Med. School.—H.	...	...	...	2	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	36
37	Detroit College of Medicine and Surgery	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	37
38	University of Minnesota Medical School	...	1	...	3	1	...	...	...	...	...	1	2	1	5	1	...	...	...	...	...	38
39	University of Mississippi School of Medicine	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	39
40	University of Missouri School of Medicine	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	40
41	Kansas City College of Medicine and Surgery.—N.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	41
42	Kansas City University of Physicians and Surgs.—N.	1	...	...	5	3	...	...	...	...	2	1	2	1	1	7	...	...	...	...	...	42
43	St. Louis College of Physicians and Surgeons*	...	...	4	...	...	...	...	...	...	...	...	23	...	...	10	...	...	...	...	...	43
44	St. Louis University School of Medicine	...	...	...	18	2	...	...	...	...	1	...	37	6	12	11	1	2	...	...	...	44
45	Washington University School of Medicine	...	1	3	2	2	...	...	...	...	...	...	21	3	3	15	...	...	...	...	...	45
46	John A. Creighton Medical College	...	...	...	...	3	...	...	...	...	...	1	...	1	18	7	...	...	...	...	...	46
47	University of Nebraska College of Medicine	...	...	...	1	1	...	...	...	...	...	2	...	...	11	2	...	1	...	...	...	47
48	Dartmouth Medical School	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	48
49	Albany Medical College	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	2	49
50	University of Buffalo Medical Department	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	50
51	Columbia University College of Phys. and Surgs.	1	1	2	1	1	13	...	1	...	3	1	3	1	...	...	1	...	1	...	3	51
52	Cornell University Medical College	1	...	...	4	2	9	...	...	...	2	...	3	1	...	...	...	...	1	1	9	52
53	Fordham University School of Medicine	...	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	3	53
54	Long Island College Hospital	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	54
55	New York Homeo. Med. College and Flower Hosp.—H.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	55
56	University and Bellevue Hospital Medical College	...	...	...	1	...	17	...	...	1	2	...	1	...	1	...	...	...	...	...	5	56
57	Syracuse University College of Medicine	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	57
58	University of North Carolina School of Medicine	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	58
59	Wake Forest College School of Medicine	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	59
60	University of North Dakota School of Medicine	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	60
61	Eclectic Medical College, Cincinnati.—E.	...	...	...	...	...	...	...	...	...	2	...	4	4	...	1	7	...	1	1	...	61
62	University of Cincinnati College of Medicine	...	...	...	...	...	...	...	...	...	...	...	4	16	...	2	23	...	...	...	...	62
63	Western Reserve University School of Medicine	2	...	...	...	...	...	...	...	1	...	2	1	3	2	3	1	...	...	...	...	63
64	Ohio State University College of Medicine	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	64
65	Ohio State Univ. College of Homeo. Medicine.—H.	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	65
66	University of Oklahoma School of Medicine	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...	66
67	University of Oregon Medical School	...	1	...	1	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	67
68	Hahnemann Med. College and Hospital of Phila.—H.	...	...	...	...	...	2	4	...	...	...	...	...	...	...	...	2	...	...	4	2	68
69	Jefferson Medical College of Philadelphia	1	...	1	1	...	15	8	...	1	1	2	3	3	2	4	2	...	2	3	12	69
70	Temple University Department of Medicine	1	...	...	...	...	...	1	...	...	1	...	...	1	1	...	...	...	1	...	...	70
71	University of Pennsylvania School of Medicine	3	...	...	4	4	6	2	1	2	...	1	2	1	2	3	3	...	...	4	1	71
72	Woman's Medical College of Pennsylvania	...	...	...	2	...	4	2	...	1	1	...	2	1	1	1	3	...	...	...	3	72
73	University of Pittsburgh School of Medicine	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	73
74	Medical College of the State of South Carolina	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	74
75	University of South Dakota College of Medicine	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	75
76	University of Tennessee College of Medicine	...	...	...	1	...	...	...	...	2	...	1	...	...	...	1	...	...	...	...	...	76
77	University of West Tennessee Medical Department	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	77
78	Meharry Medical College	11	...	10	...	...	...	...	1	2	17	...	9	...	...	2	5	9	...	1	1	78
79	Vanderbilt University School of Medicine	13	...	5	2	...	...	...	...	2	2	...	2	1	...	...	9	6	...	...	...	79
80	Baylor University College of Medicine	...	...	1	1	...	1	...	...	...	1	...	...	1	...	1	...	1	...	...	1	80
81	University of Texas Department of Medicine	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	81
82	University of Utah School of Medicine	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	82
83	University of Vermont College of Medicine	...	...	...	...	...	9	...	...	1	...	...	...	...	...	...	...	...	...	...	12	83
84	Medical College of Virginia	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	84
85	University of Virginia Department of Medicine	1	...	...	1	...	1	...	3	4	4	...	...	1	...	1	...	...	...	...	...	85
86	West Virginia University School of Medicine	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	86
87	University of Wisconsin Medical School	...	...	...	1	...	...	...	...	...	...	1	6	3	2	1	...	...	...	...	...	87
88	Marquette University School of Medicine	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	88
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

E.—Eclectic; H.—Homeopathic; N.—Nondescript. * Figures exact; distribution approximate. † Figures and distributionapproximate.



Name of College	Enrolled During 1919-20					
	1st year	2d year	3d year	4th year	5th year	Total
University of Alabama School of Med.	13	16	12	10	...	51
University of Arkansas Medical Dept.	6	3	16	6	...	31
College of Medical Evangelists	42	26	16	17	...	101
College of Phys. and Surgs., Los Angeles	32	20	19	14	...	85
Coll. of Phys. and Surgs., San Francisco[1]	...	...	...	16	...	16
Oakland College of Medicine and Surgery[1]	...	...	...	5	...	5
Leland Stanford Junior Univ. Sch. of Med.	46	27	28	17	19	137
University of California Medical School	59	63	44	27	21	214
University of Colorado School of Med.	18	20	15	18	...	71
Yale University School of Medicine	34	18	17	19	...	88
Georgetown University School of Med.	47	35	22	16	...	120
George Washington Univ. School of Med.	25	18	40	31	...	114
Howard University School of Medicine	29	18	33	33	...	113
Emory University School of Medicine	58	40	48	28	...	174
University of Georgia Medical Dept.	17	13	19	15	...	64
Chicago Medical School	16	20	25	27	...	88
Hahnemann Medical College and Hospital of Chicago.—H.	11	15	11	11	...	48
Loyola University School of Medicine	16	16	92	80	...	204
Northwestern University Medical School	107	65	79	86	71	408
Rush Medical College (Univ. of Chicago)	120	121	147	109	115	672
University of Illinois College of Med.	103	50	72	45	...	270
Indiana University School of Med.	80	39	60	51	4	234
State University of Iowa College of Med.	76	50	50	54	...	230
University of Kansas School of Med.	45	32	32	24	...	133
University of Louisville Medical Dept.	44	17	44	27	...	132
Tulane Univ. of Louisiana School of Med.	88	56	97	84	...	325
Bowdoin Medical School	20	6	7	10	...	43
Johns Hopkins University Med. Dept.	98	95	95	102	...	390
University of Maryland School of Medicine and College of Phys. and Surgs.	50	58	74	62	...	244
Boston University School of Medicine	39	19	17	13	...	88
College of Phys. and Surgs., Boston[2]	7	8	8	9	...	32
Medical School of Harvard University	120	88	101	104	...	413
Tufts College Medical School	78	87	93	80	...	338
Middlesex College of Med. and Surg.—N.[2]	68	54	53	14	...	189
University of Michigan Medical School	146	88	78	77	...	389
Univ. of Michigan Homeo. Med. Sch.—H	20	8	5	7	...	40
Detroit College of Medicine and Surgery	31	15	53	41	...	140
University of Minnesota Medical School	77	83	86	62	60	368
University of Mississippi School of Med.[4]	29	22	...	...	...	51
University of Missouri School of Med.[4]	39	30	...	...	...	69
Kansas City College of Med. & Surg.—N[2]	30	22	35	41	...	128
Kansas City Univ. of Phys. & Surgs.—N.	7	7	19	39	...	72
St. Louis College of Phys. and Surgs.[2]	40	32	30	42	...	144
St. Louis University School of Medicine	63	29	85	74	...	251
Washington University School of Med.	43	35	39	46	...	163
John A. Creighton Medical College	32	22	22	23	...	99
University of Nebraska College of Med.	63	28	49	44	...	184
Dartmouth Medical School[2]	7	14	...	...	...	21
Albany Medical College	25	16	17	21	...	79
University of Buffalo Medical Dept.	67	24	62	58	...	211
Columbia Univ., Coll. of Phys. & Surgs.	98	77	122	101	...	398
Cornell University Medical College	111	50	48	51	...	260
Fordham University School of Med.[4]	...	...	64	54	...	118
Long Island College Hospital	107	53	103	77	...	340
New York Homeopathic Medical College and Flower Hospital.—H.	39	24	45	34	...	142
University and Bellevue Hosp. Med. Coll.	166	80	106	113	...	465
Syracuse University College of Medicine	41	36	34	36	...	147
University of No. Carolina Sch. of Med.[2]	36	26	...	...	...	62
Wake Forest College School of Medicine[2]	28	17	...	...	...	45
University of North Dakota Sch. of Med.[2]	20	11	...	...	...	31
Eclectic Medical College, Cincinnati.—E.	13	23	24	33	...	93
University of Cincinnati College of Med.	72	42	62	45	...	221
Western Reserve University Sch. of Med.	49	34	41	54	...	178
Ohio State University College of Med.	60	34	33	23	...	150
Ohio St. Univ. Coll. of Homeo. Med.—H.	7	8	10	1	...	26
University of Oklahoma School of Med.	33	20	18	15	...	86
University of Oregon Medical School	54	18	17	14	...	103
Hahnemann Medical College and Hospital of Philadelphia.—H.	20	20	53	37	...	130
Jefferson Medical College of Philadelphia	174	66	114	168	...	522
Temple University Department of Med.	34	29	28	33	...	114
University of Pennsylvania Sch. of Med.	114	86	122	132	...	454
Woman's Med. College of Pennsylvania	28	31	17	13	...	89
University of Pittsburgh School of Med.	52	22	36	37	...	147
Med. College of the State of So. Carolina	23	17	10	15	...	65
University of So. Dakota Coll. of Med.[4]	14	9	...	...	...	23
University of Tennessee College of Med.	10	4	21	15	...	50
University of West Tennessee Med. Dept.[3]	3	3	3	1	...	10
Meharry Medical College	60	32	44	49	...	185
Vanderbilt University School of Medicine	13	36	40	30	...	129
Baylor University College of Medicine	33	28	47	33	...	141
University of Texas Dept. of Medicine	78	47	27	67	...	219
University of Utah School of Medicine	23	13	...	...	...	36
University of Vermont College of Med.	25	17	37	24	...	103
Medical College of Virginia	55	29	28	25	...	137
University of Virginia Dept. of Med.	33	22	20	28	...	103
West Virginia University School of Med.[4]	24	31	...	...	...	55
University of Wisconsin Medical School	91	50	...	...	...	141
Marquette University School of Med.	39	25	24	15	...	103
Totals for 1920	4234	2837	3464	3293	220	14088
Totals for 1919	5104	3587	3272	2967	122	13052
Totals for 1918	4283	3521	2803	2933	...	13530

H. Homeopathic; E. Eclectic; N. Nondescript.
* Give only first two years of medical course.
1. Suspended teaching in 1918, but are retaining nominal existence to grant diplomas to the remaining classes.
2. Number and distribution of students are approximate; number of graduates is exact.
3. Distribution by classes is approximate; totals are exact.
4. Had only two classes; will close June, 1921.

(Continued from page 383)

LENGTH OF TERMS

During the last twenty years there has been a decided lengthening of college terms. This has reference to the weeks of actual work exclusive of holidays. Prior to 1904 the majority of colleges had sessions of twenty-eight weeks or less. For five years no colleges have had sessions shorter than twenty-nine weeks, and this year only one college reported a session as short as thirty weeks. Sessions of from thirty-three to thirty-six weeks were reported by 67, or 78.9 per cent., of all colleges.

TUITION AND OTHER FEES

Attention is called to Table 1, on pages 380-382, to the amount charged by the various medical colleges per annum for tuition, matriculation, laboratory and graduation fees for each student. In Table 10, the eighty-five colleges have been grouped according to the amount of fees charged and according to their classification by the Council on Medical Education and Hospitals. Twelve colleges charge fees of $100 or less per year; thirty-four between $100 and $175, thirty-one between $175 and $250, and eight charge above $250. Of the twelve colleges charging $100 or less, ten (83 per cent.) are listed among Class A (acceptable) colleges[2] by the Council on Medical Education, while one each is in Class B and Class C. The ten Class A colleges having these low fees are the schools of medicine of the state universities of Iowa, Missouri, Oklahoma, North Dakota, South Dakota, Texas and West Virginia—for residents of those states. On the other hand, five colleges listed by the Council in Class C charge fees of from $100 to $175 per year for each student, and two exact fees of about $200. Diplomas from Class C colleges are reported as not recognized by from 37 to 42 state licensing boards.[3] No intelligent student would knowingly spend his time and money in a low-grade college, the diplomas of which are not recognized by many states, when in the same time, and for even less money, he could attend one of the best-equipped colleges, the diplomas of which are recognized everywhere. Although 45 colleges listed in Class A charge fees ranging from $150 to $350 per year for each student, the actual expense for teaching that student

2. See classification on p. 395.
3. See THE JOURNAL A. M. A., April 17, 1920, p. 1092, Table D.

for the year in these colleges is much more than the fee charged. This larger expenditure is possible because the colleges receive either state aid or private endowment. This shows that no medical college can properly teach medicine on the income received from fees alone.

COLLEGES, STUDENTS AND GRADUATES BY STATES

Illinois formerly had the largest number of medical colleges (Table 11), but for the last three years the first place has been held by New York, where there are still nine colleges. Illinois, Missouri and Pennsylvania have six colleges each; Massachusetts and Ohio have five each, and Tennessee has four. Of Class C colleges, however, Missouri has three, Massachusetts has two, and there is one each in Illinois and Tennessee. In Missouri the Class C colleges are not recognized by the local state licensing board and exist because that board does not have or does not exert the power to their charters revoked.

For the last four years New York has had the largest number of students enrolled, this year having

TABLE 10.—COLLEGE FEES

Total Fees	Number of Colleges			
	Class A	Class B	Class C	Total
$ 50 or less	3	..	..	3
50 to $ 75	4	..	..	4
75 to 100	3	1	1	5
100 to 125	7	..	1	8
125 to 150	8	..	3	11
150 to 175	11	3	1	15
175 to 200	9	1	2	12
200 to 225	11	1	..	12
225 to 250	6	1	..	7
250 to 275	2	..	..	2
275 to 300	2	..	..	2
300 or above	4	..	..	4
Totals	70	7	8	85

2,160, followed by Illinois with 1,690 and Pennsylvania with 1,456. New York leads also in the number of graduates, having reported 542, followed by Pennsylvania with 399, Illinois with 321, Missouri with 228, and Massachusetts with 215.

QUALIFICATIONS OF STUDENTS AND GRADUATES

Table 12 shows the students and graduates of the last six years grouped according to their classification by the Council on Medical Education and Hospitals. Note that during the eight years the *percentage* of students enrolled in Class A colleges has increased from 65.4 to 90.2, and that for the last four years also the total numbers of students in attendance at these schools has increased from 11,317 to 12,610. Note, on the other hand, both the numbers and the percentages of students enrolled in Class B and Class C colleges have been reduced. The percentage of students in Class B colleges has been reduced from 24.4 to 4.1 and in Class C colleges from 10.2 to 4.2. Of graduates, also, the percentage in Class A colleges shows an increase, while in Class B and Class C colleges there has been a decrease. The reduction in the total number of students and graduates, therefore, has been largely at the expense of the lower grade colleges, while the numbers of students and graduates in the higher grade colleges are increasing.

HINTS TO PROSPECTIVE MEDICAL STUDENTS

The student who is contemplating the study of medicine should read with care the instructions entitled "Choice of a Medical School" beginning on page 391. The selection of the school in which he is to obtain his

TABLE 11.—MEDICAL COLLEGES, STUDENTS AND GRADUATES BY STATES

State	Colleges		Students		Graduates		Graduates with B.S. or A.B.
	Total	Class C	Men	Women	Men	Women	
Alabama	1	....	51	....	10	....	2
Arkansas	1	....	31	....	6	....	....
California	3	....	488	70	77	13	48
Colorado	1	....	65	6	17	....	4
Connecticut	1	....	83	5	17	2	19
Dist. of Columbia	3	....	339	8	66	1	26
Georgia	2	....	238	....	43	....	6
Illinois	6	1	1,578	112	302	12	224
Indiana	1	....	221	13	46	2	48
Iowa	1	....	224	6	52	1	25
Kansas	1	....	136	7	20	3	14
Kentucky	1	....	126	6	22	2	6
Louisiana	1	....	311	14	81	....	24
Maine	1	....	43	....	10	....	7
Maryland	2	....	573	61	140	12	98
Massachusetts	5	2	1,005	55	196	19	114
Michigan	3	....	535	34	118	5	45
Minnesota	1	....	353	15	60	....	55
Mississippi	1	....	49	2	....	....	....
Missouri	6	3	808	19	221	7	39
Nebraska	2	....	272	11	63	2	40
New Hampshire	1	....	21	....	....	....	....
New York	9	....	2,024	136	519	23	168
North Carolina	2	....	104	3	....	....	....
North Dakota	1	....	29	2	....	....	....
Ohio	5	....	636	32	142	5	90
Oklahoma	1	....	80	6	14	1	10
Oregon	1	....	92	11	13	1	5
Pennsylvania	6	1	1,333	123	304	15	125
South Carolina	1	....	62	3	14	....	5
South Dakota	1	....	22	1	....	....	....
Tennessee	4	1	302	5	83	1	26
Texas	2	....	338	22	95	5	30
Utah	1	....	35	1	....	....	....
Vermont	1	....	103	....	22	....	2
Virginia	2	....	234	6	50	1	19
West Virginia	1	....	53	2	....	....	....
Wisconsin	2	....	225	19	2	....	2
Totals	85	8	13,271	817	2,913	134	1,221

TABLE 12.—STUDENTS AND GRADUATES ACCORDING TO CLASSIFICATION

Year	Students						Graduates					
	Colleges Rated in Class						Colleges Rated in Class					
	A	%	B	%	C	%	A	%	B	%	C	%
1913	11,122	65.4	4,158	24.4	1,735	10.2	2,330	63.8	1,050	28.4	302	9.8
1914	12,336	74.7	2,838	17.2	1,328	8.1	2,636	73.1	686	19.1	282	7.8
1915	11,514	76.0	2,668	17.9	909	6.1	2,629	74.4	688	19.4	219	6.2
1916	11,162	79.6	2,087	14.9	773	5.5	2,630	74.7	695	19.8	193	5.5
1917	11,317	82.2	1,761	12.8	686	5.0	2,577	76.3	648	19.2	154	4.5
1918	11,522	84.5	1,488	10.9	620	4.5	2,624	75.8	399	14.9	247	9.2
1919	11,466	87.9	1,066	8.3	500	3.8	2,220	83.6	268	10.1	168	6.3
1920	12,610	89.6	680	4.8	798	5.6	2,690	88.4	152	5.0	205	6.6

medical training is a matter of extreme importance and should be considered by the student with special care. He should note the standards of premedical education which are given on page 393; he should note the subjects required by the individual medical schools which, if different from those outlined by the Council on Medical Education and Hospitals, will be found in the descriptive statements of those colleges appearing on pages 398 to 408. A careful review of the material published this week will be of great service to such students.

HOSPITALS FURNISHING ACCEPTABLE INTERNSHIPS

On pages 409 to 415 is published this year a list of hospitals which, after careful investigation, have been considered in position to furnish acceptable internships. Although not previously published in THE JOURNAL, this list has already passed through several revisions. The information from the hospitals has become more and more complete so that the lists are also more reliable.

The present list includes 469 general hospitals, providing a total of 2,960 internships. Included in the list, also, are 25 state and other hospitals for the insane which provide places for graduates who may desire to obtain special training in nervous and mental diseases. There is also a list of 99 special hospitals providing interiships for 388 students. It is usual for those seeking internships in state or special hospitals to have first completed an internship in a general hospital. The 469 general hospitals listed have a total of 103,997 beds. The state hospitals have 41,722, and the special hospitals have 215,443, making a grand total of 361,162.

This list also shows, in the last column, the hospitals which have nurses' training schools. The fact that these institutions are approved for interns indicates that they also are fairly provided with nurses, which would indicate that they are also worthy of approval from the standpoint of nursing instruction.

GRADUATE MEDICAL EDUCATION

The facilities for graduate medical instruction in the United States are set forth on the next few pages. Not only are the separate graduate medical schools given, but also the opportunities available in undergraduate medical schools. In the latter, the courses vary somewhat from year to year, but the outlines given indicate the variety and extent of such work. It is hoped that by the publication each year of these data opportunties in undergraduate schools may be enlarged and a greater use be made of the abundance of clinical material in this country. The majority of undergraduate medical schools are now on a par with those in other leading countries; their future development need not be hindered by providing also for the giving of graduate courses.

GRADUATE COURSES IN PUBLIC HEALTH

Graduate courses in public health have been established in connection with eleven medical schools, the first of which was at the University of Pennsylvania in 1909; the latest is that in connection with the medical department of the Johns Hopkins University, which began its course in 1918. Two institutions, the University of Colorado and Tulane University, suspended their courses in 1918. Five of the schools have courses leading to the degree of Doctor of Public Health (Dr.P.H.) after a two-year course. The University of California offers the degree of Graduate in Public Health (Gr.P.H.) after a two-year course instead of the degree of Dr.P.H. The degree of Certified Sanitarian (C.S.) after a one-year course is offered by the University of Pennsylvania to graduates of colleges of arts and sciences. The degree of Master of Public Health (M.P.H.) is offered after a one-year course by the Detroit College of Medicine and Surgery and the University of Wisconsin Medical School. The Master in Arts in Public Health [M.A. (P.H.)] is offered by the University of California Medical School, and the Master in Science in Public Health [M.S (P.H.)] by the University of Michigan. The courses offered by the eight schools of public health are as follows:

THE UNIVERSITY OF CALIFORNIA: Courses began in 1915; number of instructors, 20; three courses leading to degree of Gr.P.H.: (a) a four year course covering three years in the college of letters and science and one year in the medical school; (b) a two year course covering one year in the college of letters and science and one year in the medical school for graduates of the college of civil engineering who have completed the work in sanitary engineering, and (c) a course of one and a half years, including one year in the college of letters and science, and a half year in the medical school for students who have completed three and a half years of the medical course. Completion of this third course gives the degrees of M.D. and Gr.P.H. The University of California also offers a one year course to graduates in arts or sciences for the degree of Master in Arts in Public Health [M.A. (P.H.)]. Fees are $150 each year. A thesis is required for the degree. The course extends from August to May. Students 1919-1920, 16; graduates, 10.

JOHNS HOPKINS MEDICAL SCHOOL: The School of Hygiene and Public Health was opened in October, 1918. There are 12 professors and 37 lecturers, associates and instructors, a total of 49. Four courses are offered: (a) A one year course leading to the degree of Dr.P.H., requiring for admission a bachelor's degree and a degree in medicine. The degree of M.D. and the degree of Dr.P.H. may be obtained in a combined course of five years. A thesis is required for graduation. (b) A three year course leading to the degree of Doctor of Science in Hygiene requiring for admission a bachelor's degree and adequate training in physics, chemistry, biology and the medical sciences, anatomy, physiology and pathology. A written and oral examination and a dissertation embodying the results of an independent investigation are required for graduation. (c) A two year course leading to the degree of Bachelor of Science in Hygiene, the course consisting of combined work in the medical school and the School of Hygiene and Public Health. For admission the applicant must have completed at least two years of work in an approved college and have studied courses in physics, biology, inorganic and organic chemistry. (d) A one year course leading to a certificate in public health is also offered to graduates of approved medical schools or graduates in arts or sciences who present evidence of satisfactory training in the physical and medical sciences. The fees charged are $250 per year. Courses for special students are $50 per trimester. Altogether, 84 students were enrolled during 1919-1920, including 35 who were candidates for degrees. The course extends from September 28 to June 21.

MEDICAL SCHOOL OF HARVARD UNIVERSITY: The School of Public Health was opened in 1910; there are 40 instructors. A one year course is offered leading to a certificate in public health. For admission the applicant must have completed two years of work in a recognized medical school, or have received a bachelor's degree from an approved college or technical school, or have had special experience in public health work. In any instance he must show evidence of having completed satisfactory courses in physics, chemistry and biology and modern languages and the fundamental medical sciences. Although not a prerequisite, all candidates are advised to obtain a medical degree before specializing in public health work. Fees are $250 per year; Course extends from October to June.

DETROIT COLLEGE OF MEDICINE AND SURGERY: The course began in 1913 with ten instructors. A one year course leading to the degree of Master of Public Health (M.P.H.) is offered to graduates of approved medical schools. The work is conducted at the college, the Detroit City Board of Health, and the Municipal Contagious Hospital. It includes sanitary engineering, laboratory, clinical and field work. Fees are $100 per year. No thesis required. No students enrolled during the past session. The course extends from September to June.

THE UNIVERSITY OF MICHIGAN MEDICAL SCHOOL: The graduate courses in public health were established in the University of Michigan in 1913. The number of instructors is approximately 10. Two courses are offered—one to graduates in arts and sciences or medicine extending from one to two years, leading to the degree of Master in Science and Public Health; a course of from two to three years in length for graduates in arts or sciences and medicine, leading to the degree of Doctor of Public Health. For residents of Michigan the fees consist of $10 matriculation and $80 for men students and $76 for women; for nonresidents of Michigan, matriculation $25 and an annual fee of $100 for men and $101 for women. A thesis is required for the degree of Dr.P.H. There is a summer session but the regular session extends from October 1 to July 1. In 1919-1920 4 students were enrolled.

UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE: The graduate course in public health began in 1916 with approximately 30 teachers. Two courses are offered—a two years course leading to the degree of Doctor of Public Health for graduates of approved medical schools, and a correspondence course of indefinite length, especially adapted for health officers. The tuition for the Dr.P.H. course is $200 for the first year and $25 for the second. The fee for either the correspondence or 26 days' resident course is $30, including the matriculation fee. For the correspondence course the last week must be spent in residence. There were 145 health officers reported as taking the correspondence course during the year. The courses run from October to June.

THE UNIVERSITY OF PENNSYLVANIA: The graduate courses in public hygiene began in 1906; there are 19 instructors; two courses are offered, —a two years' course for graduates in medicine, leading to the degree of Dr.P.H. and a one year course for graduates of arts or science leading to the degree of Certified Sanitarian. A thesis is required for graduation. The fees are $250 per year. There were 8 students during 1919-1920; 4 graduates. The course extends from October to June.

THE UNIVERSITY OF WISCONSIN: Graduate courses in public health began in 1910. There are eight teachers. Two courses are offered—a one year course for graduates in medicine, leading to the degree of Master of Public Health (M.P.H.); the other a two year course for physicians, leading to the degree of Doctor of Public Health. Fees are $50 per year for residents of Wisconsin and $170 for nonresidents. A thesis is required for graduation. Address inquiries to Miss Ruth Hames, Secretary, Medical School.

Uniform Requirements in 1920-21

On February 28, 1919, at a conference of representatives from a number of universities in the country held at New Haven, Conn., the following regulations were adopted to take effect with the Session 1920-21:

1. That the degree of Doctor of Public Hygiene (for which the abbreviation shall be Dr.P.H.) for graduates in medicine shall be awarded after two years of work done under academic direction, of which one year at least shall be in residence, and that the requirements for the degree shall include class work, practical field work, and an essay based on individual study of a particular problem.

2. That the degree Doctor of Philosophy or Doctor of Science in Public Hygiene shall be conferred on students who hold the bachelor's degree from a college or technical school of recognized standing, and have satisfactorily completed not less than three years of graduate study. It is understood that this degree is based on a knowledge of physics, chemistry, biology, anatomy, physiology, physiologic chemistry, pathology and bacteriology.

GRADUATE COURSES IN MEDICAL SCHOOLS

Special correspondence with medical schools shows that there are many opportunities for graduate study which physicians have not been able to take advantage of through the lack of knowledge in regard to them. The following list has been prepared to correct this deficiency. More complete information can be obtained by correspondence with the medical school concerned.

CALIFORNIA

LELAND STANFORD JUNIOR UNIVERSITY SCHOOL OF MEDICINE, San Francisco.—Graduate courses are open to physicians: (a) Mid-day clinics, 11:30 to 12:30 daily, covering medicine, medical specialties, surgical specialties, obstetrics, gynecology and pathologic conferences free of charge at the (b) Clinical examinations at the Polyclinic of the San Francisco Hospital. On Thursdays beginning 9 a. m., the work is in surgery and the surgical specialties; on Fridays, beginning 9 a. m., medicine and the medical specialties. These courses are free of charge. (c) Assistantships in clinics and laboratories. A physician may be assigned to some research problem or receive regular instruction from a member of the staff. For the latter an appropriate fee is charged and a nominal fee also for materials used. During the last five years an average of 28 physicians each year has occupied these assistantships.

UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL.—Resident positions are open to properly qualified medical graduates as follows: In the University Hospital: A resident position in general medicine and four assistant residentships, one each in general medicine and dermatology; in neuro-psychiatry and infirmary; in out-patient department; in medical research. Besides a residentship in surgery, there are five assistant residentships, one each in general surgery; urology; orthopedic surgery; ophthalmology, ortorhinolaryngology; out-patient department and surgical pathology. There are a residentship and two assistant residentships each in pediatrics and in obstetrics and gynecology. There is one residentship each in pathology and in biochemistry and clinical laboratories. In the San Francisco Hospital as house officers there are two positions in medicine and tuberculosis; two in surgery; one in pediatrics and isolation and one in obstetrics and gynecology. Special courses to physicians and advanced students are open in the departments of anatomy (at Berkeley) neuro-surgery, pathology, and research medicine. An announcement regarding public health work appears in another column.

COLORADO

UNIVERSITY OF COLORADO SCHOOL OF MEDICINE, Boulder-Denver.—During the present summer, courses for physicians were given in bacteriology, biochemistry, blood chemistry, anatomy, histology, embryology, clinical laboratory technic, advanced pathology and ophthalmology. The session extended from June 14 to August 28 divided in two terms. Physicians may register for either term or for the entire quarter.

ILLINOIS

RUSH MEDICAL COLLEGE, Chicago.—The following courses are offered for physicians: (a) Operative surgery on the cadaver extending over four weeks. (b) A course on tuberculosis. (c) Special course for three or four physicians who are willing to spend a full year in diseases of the ear, nose and throat. (d) Attendance at arena clinics for which a visitor's ticket for a week is issued—registration not limited. (e) Opportunities for a few physicians for investigative work in pathology. Fees: $25 for each major's work, or $75 for a full quarter.

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE, Chicago.—The summer quarter is devoted to courses for physicians, and during the balance of the year a large number of fellowships are available in courses leading to the degrees of Master of Science and Doctor of Philosophy. A well organized course in ophthalmology has been established. Special opportunities for individual research work in anatomy, pharmacology, and pathology and bacteriology were offered during the present summer quarter.

MICHAEL REESE HOSPITAL, Chicago.—There are five Fellowships, one each respectively in medicine; surgery and gynecology; eye, ear, nose and throat; pediatrics, and genito-urinary diseases. These Fellowships are open to physicians who have completed internships in acceptable hospitals; preference is given to former interns of this hospital. The work includes daily service in dispensary clinics and a limited number of visits to the sick in their homes. The time devoted is about six half days per week. These Fellowships provide excellent clinical training and offer opportunity also for special research work. The Fellowships include an annual stipend of $900 each.

INDIANA

INDIANA UNIVERSITY SCHOOL OF MEDICINE, Indianapolis.—Opportunities for any physicians resident in the state, who make application. During the present summer courses on immunity and on disease production and resistance were offered. Other courses will be arranged as requested so far as facilities will allow.

IOWA

STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE, Iowa City.—During the present summer a four weeks' review course limited to 14 physicians was offered. There are opportunities for physicians to act as clinical assistants, research workers, hospital chemists, etc., in the various departments of the medical school. Special opportunities are always open for physicians with research ability.

MARYLAND

JOHNS HOPKINS UNIVERSITY MEDICAL DEPARTMENT, Baltimore.—During the present summer a six weeks' course in medical diagnosis was offered, limited to twenty physicians. The course consisted in ward rounds, lectures, clinics, group courses, physical diagnosis, laboratory work in clinical microscopy, and group clinics in the special study of syphilis. Provision can be made for similar classes in the other main departments of the medical college. Opportunities for advanced work open to a certain number of qualified men. The work is arranged for by personal communication between the applicants and the heads of the various departments. Special opportunities for long time service in the hospital.

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE, Baltimore.—Courses are open for physicians in operative surgery, anatomy, obstetrics, genitourinary diseases, roentgen ray and clinical laboratory work. Arrangements made by personal communication.

MICHIGAN

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL, Ann Arbor.—Special courses open for any qualified physisians in laboratory or clinical work, regional anatomy or a preparation for medical specialties; also special methods and investigative work in bacteriology. Extended courses also offered leading to the degrees of Master of Science, Doctor of Philosophy and Doctor of Science. Summer courses are open for advanced work in research anatomy and bacteriology.

MISSOURI

WASHINGTON UNIVERSITY MEDICAL SCHOOL, St. Louis.—A series of courses are open for physicians in the Barnes and City Hospitals and in the outpatient department and clinical laboratory of the medical college. The physician may devote all or a part of his time in the wards, dispensary, or in the laboratory. The courses extead over four weeks during the summer session. Maximum fees are $50 for a half day or $100 for the entire day. During the present summer courses were offered in physical and differential diagnosis, clinical chemistry and microscopy, tuberculosis, dermatology and syphilis, diseases of metabolism, applied immunology, mental dificiency and cardiovascular-renal diseases. In several of these subjects the courses included clinical subjects, lectures, ward rounds, instruction in diagnostic methods, application of laboratory tests and, in mental diseases, interpretation of intelligence tests. Special courses are given in pediatrics. Courses arranged by individual communication.

NEBRASKA

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE, Omaha.—Opportunities for a few physicians to do graduate work in the departments of anatomy, physiology, biochemistry, pathology and bacteriology. A few opportunities open also in the clinical departments.

NEW YORK

COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS, New York City.—"Courses for physicians are being arranged which will become available in the fall of 1920."

LONG ISLAND COLLEGE HOSPITAL, Brooklyn.—Positions comparable to fellowships open for physicians who have completed internships. These are in several clinical departments of the hospital. Courses open in fundamental branches; courses also open in embryology, neuro-anatomy, histology, bacteriology, biochemistry, physiology, preventive medicine and hygiene. Also opportunities for research work in biochemistry and physiology. Special courses on animal locomotion, heart and circulation, and functional diseases. Opportunities also for physicians to do advanced work. Arrangements made by personal communication.

UNIVERSITY AND BELLEVUE HOSPITAL COLLEGE OF MEDICINE.—Various graduate courses are open for physicians as follows: Research courses in anatomy, embryology, chemistry, physiology, pharmacology and therapeutics as well as special courses in pathology, bacteriology and surgery. Clinical courses occupying about six weeks each are also offered in medicine and physical diagnosis, clinical and operative gynecology, genito-urinary diseases, laryngology, ophthalmology, pediatrics and dermatology.

OHIO

WESTERN RESERVE UNIVERSITY SCHOOL OF MEDICINE, Cleveland.—The summer session is devoted especially to courses for physicians. Courses also available during the remainder of the year especially for physicians desiring advanced research work either in clinical or laboratory subjects. Arrangements by personal communication.

VIRGINIA

MEDICAL COLLEGE OF VIRGINIA, Richmond.—Opportunities open for a few physicians to take courses in the combined laboratories of the college, of the State Board of Health, and of the Richmond City Board of Health.

ONTARIO

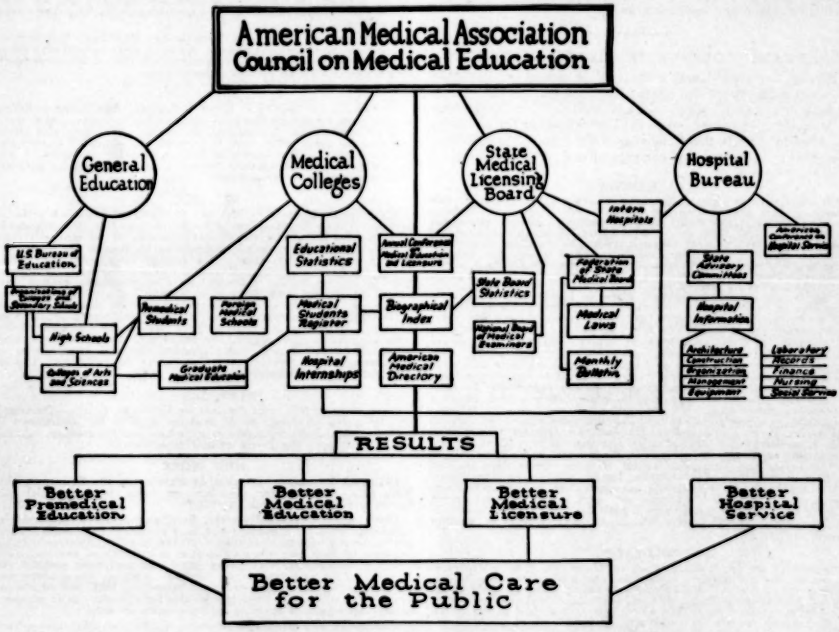
UNIVERSITY OF TORONTO FACULTY OF MEDICINE, Toronto.—Graduate courses in clinical and laboratory work are available to physicians on application. During the present summer session a special course in pediatrics was offered. Also a series of lectures were prepared and given before medical societies or other groups of physicians in the country districts. These dealt with biochemistry, hygiene, medicine, pediatrics, obstetrics and gynecology, otolaryngolgy, pathology, pharmacology, physiology and respiration of the heart, and surgery.

GRADUATE MEDICAL SCHOOLS

There are now eighteen graduate medical schools in the United States. These are commonly referred to as post-graduate medical schools. Of these institutions, seven are connected with universities in which the graduate teaching is, or will be, as thoroughly and scientifically given as are the courses of the undergraduate medical school. The universities having graduate schools are the Universities of Alabama, California, Tulane, Harvard, Minnesota, Columbia and Pennsylvania. The University of Chicago has received a generous endowment preparatory to the establishing of a large graduate school. Active steps toward this end will be taken in the the early future. Following is the complete list of the graduate medical schools:

ALABAMA

Graduate School of Medicine of the University of Alabama, Ave. F and 20th St., Birmingham. Organized 1915. Formerly the Birmingham Medical College. Suspended in 1918; reopens in fall of 1920. The dean is Dr. Lewis C. Morris, Empire Bldg.



Reproduction of a chart from the exhibit of the Council on Medical Education and Hospitals at the session of the American Medical Association in New Orleans, April 26-30. It shows the many ramifications of the work of the Council on Medical Education by which the latter has come into intimate touch with other departments of education, with medical licensure and with hospitals.

CALIFORNIA

San Francisco Polyclinic and Post-Graduate School, 1535 Jackson St., San Francisco. The dean is Dr. H. D'Arcy Power.

Graduate School of Medicine of the University of California, Buena Vista and Alpine Sts., Los Angeles. Organized 1914. Formerly the University of Southern California College of Medicine. The dean is Dr. George H. Kress.

ILLINOIS

Chicago Polyclinic, 219-221 W. Chicago Ave., Chicago. The secretary is Dr. Malcolm L. Harris, 32 N. State St.

Illinois Post-Graduate Medical School, 1844 W. Harrison St., Chicago. The secretary is Dr. James A. Clark.

Post-Graduate Medical School, 2400 Dearborn St., Chicago. The secretary is Dr. Emil Ries, 77 E. Washington St.

Chicago Eye, Ear, Nose and Throat College, 235 W. Washington St., Chicago. The secretary is Dr. John R. Hoffman, 31 N. State St.

Provident Hospital Post-Graduate School, 16 W. 36th St., Chicago. For colored physicians. The dean is Dr. George C. Hall.

LOUISIANA

New Orleans Polyclinic. Post-Graduate School of Medicine of the Tulane University of Louisiana. Tulane Ave. and Liberty St., New Orleans. The dean is Dr. Charles L. Chassaignac.

New Orleans Post-Graduate School of Medicine, 135 S. Rampart St., New Orleans. The secretary is Dr. Joseph A. Danna.

MASSACHUSETTS

Harvard Medical School, Courses for Graduates, 240 Longwood Ave., Boston. Organized as a separate division of the Medical School, 1912; all instruction under the charge of the Faculty of Medicine. Instruction is given throughout the year. The officer in charge is the assistant dean, Alexander S. Begg, M.D.

MINNESOTA

University of Minnesota Graduate School of Medicine, Minneapolis. Organized 1914. In 1915, the resources and facilities of the Mayo Foundation were added, with the staff, clinics, laboratories, library and records at Rochester, Minn. A nine months' course of advanced work is offered in the science departments giving the fundamental training essential in ophthalmology and otolaryngology will begin Sept. 29, 1920. It will include anatomy, embryology and histology of the sense organs and of the head region; physiologic optics; physiology of the special senses and of speech; pathology and bacteriology as applied to the eye, ear, nose and throat. The course will include lectures, demonstrations, quizzes and cinical work in the outpatient department. The course is limited to ten students. There are also two teaching fellowships, each available in internal medicine, surgery, obstetrics, ophthalmology and otolaryngology, pediatrics, and mental and nervous diseases. Five others are available in the laboratory sciences, and eighty-six others are available under the Mayo Foundation. Courses in various specialties leading to higher degrees in medicine (M.A., M.S., Ph.D.). Instruction throughout the year. The dean is Guy Stanton Ford, Ph.D., Minneapolis.

NEW YORK

The New York Association for Medical Education is organized to collect information regarding available graduate medical instruction; to work for the improvement of existing courses and the establishment and development of new opportunities for advanced study; to bring about an affiliation between medical schools and hospitals whose facilities have not before been utilized for teaching purposes; and to serve as a bureau of information and assistance to prospective students. The executive offices are at the Academy of Medicine Bldg., 17 W. 43d St., New York. The graduate schools are as follows:

New York Post-Graduate Medical School, 2d Ave. and 20th St., New York City. The secretary is Dr. J. Bentley Squier.

New York Polyclinic Medical School, 341-51 W. 50th St., New York City. Is to be taken over and the work developed by Columbia University. The president is Dr. John A. Wyeth, 341 W. 50th St.

Manhattan Eye, Ear and Throat Hospital and Medical School, 210 E. 64th St., New York City. The secretary is Dr. Samuel J. Kopetzky.

SCHOOL OF OPHTHALMOLOGY AND OTOLOGY, 13th St. and 2d Ave., New York City. The secretary is Dr. George S. Rixon, 40 E. 41st St.

COLLEGE OF THE NEW YORK OPHTHALMIC HOSPITAL, 23d St. and Third Ave., New York City. The secretary is Dr. W. C. McKnight, 13 Central Park West.

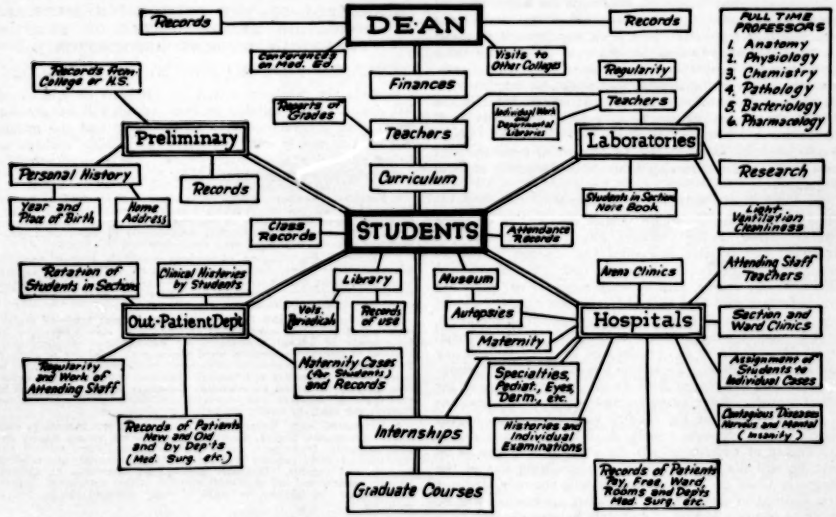
PENNSYLVANIA

GRADUATE SCHOOL OF MEDICINE OF THE UNIVERSITY OF PENNSYLVANIA, Philadelphia. Organized 1916 by a merger with the University of the Medico-Chirurgical College of Philadelphia. The Philadelphia Polyclinic was merged in 1918. The faculty includes about 230 teachers. Courses extending over from four to twelve months in medicine, pediatrics, neurology, dermatology, syphilology, roentgenology, surgery, gynecology, obstetrics, orthopedics, urology, proctology, ophthalmology, otolaryngology and the medical sciences. Fees: Four month courses, $200; eight month, $400; twelve month, $600. Special schedules (few only), special fees. The dean is Dr. George H. Meeker.

CHOICE OF A MEDICAL SCHOOL

For the student who has decided to study medicine the first and most important step is the selection of a medical school; a false step here may handicap him for life.

A MODERN MEDICAL SCHOOL



Reproduction of a chart from the exhibit of the Council on Medical Education and Hospitals at the session of the American Medical Association in New Orleans, April 26-30. It gives some idea of the intricate mechanism of a modern medical school; it shows the many inter-relations of the medical school with its laboratories, hospitals and dispensaries, and the many lines of work with which the dean or executive officer of the medical school needs to keep in intimate touch.

Before choosing a medical school the student should obtain information in regard to its requirements of preliminary education; the character of its teaching; its classification; the tuition fees charged and—most important—whether or not its diplomas are recognized by all state medical boards.

ADEQUATE ENTRANCE QUALIFICATIONS

The student should make sure that his preliminary education is sufficient to meet the requirements of the state licensing boards of the country. He should know that at the present time thirty-four [1] (69.4 per cent.) state licensing boards require that before beginning the study of medicine the student must have completed *two years* of work in an approved college of liberal arts, in addition to a four-year high school education.[2] Although he may not at first seek a license in one of these thirty-three states, he may later miss a great opportunity by being thus debarred. He should know also that all the better medical colleges now require this higher preliminary education, since—most important of all—the student needs it to study and understand the difficult and complex subjects of the modern medical course. Lower entrance requirements by any medical college, therefore, should be regarded as an indication that the medical training furnished will be correspondingly low.

BETTER MEDICAL TRAINING ESSENTIAL

Medicine is now based on scientific knowledge, without which the physician will be seriously handicapped. Adequate instruction in the recognition, treatment and prevention of diseases can be given only in acceptable (Class A) medical schools, which have expert teachers, well-equipped laboratories, and dispensaries and hospitals where the student can study patients having all varieties of sickness and injuries.

IS THE MEDICAL COLLEGE RECOGNIZED?

Formerly a course in almost any medical college furnished an adequate qualification for the license to practice medicine in all states. At present, however, state licensing boards are refusing to recognize medical colleges which are deemed not properly equipped to furnish a training in modern medicine. The student should know that the diplomas granted by some medical schools are not recognized in as high as from 37 to 42 states.[3] A diploma from one of these medical colleges, therefore, would not qualify him to practice medicine in any of those states. The student must make sure, not only that he has adequate preliminary education, but also that he has secured his medical training in a college recognized in all states.

CONSIDER CAREFULLY THE COST

The student, of course, is bound to consider the expense of his medical training, and herein lies the bait by which

1. These states may be noted in Table L, THE JOURNAL, April 17, 1920, p. 1099.
2. The courses required and recommended in the high school and two-year premedical college courses are set forth on page 393.
3. See Table D, THE JOURNAL, April 17, 1920, p. 1092.

some inferior colleges which profess deep interest in "the poor boy" endeavor to attract students. If the training is not thorough and up to date, the student should know that the training furnished will be a mighty poor investment at any price. As a matter of fact, and as may be noted in Table 1, on page 380, the total fees charged by some of the best (Class A) medical colleges, particularly the medical departments of some state universities, are lower than those charged by some of the poorly equipped (Class C) institutions which are not recognized by the majority of state licensing boards.

In the same length of time, therefore, and often for even lower fees than he would pay in a poorly equipped institution, the student may acquire his education in one of the best medical colleges of the land. Although some of the better schools do charge higher fees, they spend on each student per year several times the amount of money that the student pays for tuition. This they are able to do because of their larger incomes from endowments or state aid. It would be poor economy, therefore, for a student to enter a low-grade college whose diplomas are not recognized in the majority of states, when for a few additional dollars each year he can enter a thoroughly equipped institution, receive a far better medical training and obtain a diploma recognized everywhere. Even if one should be required to work one's way through, in whole or in part, the opportunities for doing so are usually more abundant in the better than in the lower standard colleges. As a rule, however, the student who works his way through college appreciates not only the value of money, but also the value of the medical course he is getting, and many such students are found in the high-grade medical colleges. There are now over 300 free scholarships, as well as generous loan funds, available for deserving students in the better medical colleges.[4]

GET RELIABLE INFORMATION

How may the student secure reliable information on these matters? Some medical colleges advertise extensively in newspapers and popular magazines and through announcements and circulars containing exaggerated, if not misleading, statements. *Of course, such advertisements do not show the more important fact that their diplomas are reported as not recognized in from 37 to 42 states.* It is essential, therefore, that the student should secure information from impartial and reliable sources, so as to make sure he is not enticed into a low-grade institution. To inform himself thoroughly, therefore, he should not depend alone on the announcements of the medical schools. After extensive and repeated investigations the medical schools of the country have been rated by the Council in three classes, namely, A, B and C, according to their degree of excellence.[5] If the student is otherwise in doubt, he will not make a mistake by choosing one of the colleges in Class A. By so doing he will not only obtain a better training in medicine but also, after graduation, will be eligible to secure a license in any state he may choose.

A STRONG AND SURE FOUNDATION

In his preliminary and medical education the student should bear in mind that he is *laying the foundation for the rest of his life.* If he finds that additional preliminary education is needed to enter one of the better medical colleges, he should consider the time well spent, since he is all the more sure of having laid a solid foundation. Although all professions in this country are crowded, there is always room for the thoroughly competent. On the other hand, the student will be disappointed if, because of lower entrance requirements or other allurements, he is induced to get his training in a poorly equipped college and finds after graduation that his diploma is not recognized in many states, and that otherwise he is handicapped for life.

AVOID CULTS AND FADS

Among the worst pitfalls confronting the present day student is the number of institutions representing various unscientific, or pseudo-scientific cults, such as osteopathy, chiropractic, etc., which profess to train those who desire to treat human ailments. Medical knowledge is now based on scientific facts and there is no longer room for the differences of opinion which in earlier days were justifiable. No one can afford to confine his training to the narrow theories held by any cult but should obtain a thorough, all-round scientific training by which he will be prepared to care intelligently for any form of human ailment or disorder which presents itself and to apply skilfully any form of treatment which each particular patient may require. One must have a thorough training in *all the fundamentals of medicine* before he can intelligently employ any particular method of treatment, even as the member of an orchestra must have a thorough training in all the fundamentals of music before he can play any particular instrument in that orchestra. One must first become a good general practitioner of medicine; then if he wishes to specialize along any particular line he will naturally secure further training for such specialty.

4. A list of colleges which provide scholarships and loan funds will be found on page 398.

5. See classification on page 395.

STANDARDS OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

SCHEDULE FOR GRADING MEDICAL SCHOOLS

Schools are rated on a civil service basis on a scale of 100 points. Data relating to each school will be grouped under four general heads in such manner that the groups will have as nearly equal importance as possible, each group being allowed a possible 25 points. The revised schedule under the four general heads is as follows:

1. FACULTY.—Number; qualifications (standing in profession, evidences of special training, teaching experience, etc.); research ability; efficiency; proportion of time to teaching; proportion to student enrolment; organization of departments; completeness of department staffs, including dieners, employees, etc.; esprit de corps.

2. PRODUCT.—Qualifications of students admitted; student organizations; esprit de corps; records of graduates before state and national boards; research; articles written; excellence as teachers; membership in medical organizations; reputation in profession; other evidences of character of training; reputation of college.

3. ADMINISTRATION AND SUPERVISION.—Curriculum: grade of course; sequence of subjects; arrangement of subjects in class roster and by departments in annual announcements; completeness of curriculum. Division of students in sections, ward classes, etc. Efficiency of routine. Faculty meetings. Supervision of entrance requirements, of teaching in college and in dispensary and hospital. Records: entrance requirements; class grades; promotion of students; dispensary and hospital records; attendance of teachers and students; conditions, etc.; completeness. Budget: use made of funds; proportion to salaries, etc.

4. BUILDINGS AND EQUIPMENT.—College building, including class rooms, laboratories, library, museum, storage rooms, animal houses and their contents. Dispensary: rooms used for; accessibility; number and regularity of staff; quantity and use of clinical material; character of histories and records. Hospital: accessibility; ownership or control; quantity, variety and use of clinical material. Other equipment. Apparatus. Funds: in addition to students' fees; endowed chairs, fellowships, etc.

Colleges obtaining 70 per cent. or above are rated in Class A, those obtaining from 50 to 70 per cent. in Class B, and those obtaining 50 per cent. or less in Class C.

MEANING OF CLASSES A, B AND C

Class A Colleges are those which are acceptable; Class B, those which, under their present organization, give promise of being made acceptable by general improvements, and Class C those

(*a*) Which require a complete reorganization to make them acceptable.

(*b*) Which do not keep satisfactory records of their students in regard to entrance requirements, attendance, grades in courses, division into classes and reasons for promotion.

(*c*) Which do not enforce their requirements in regard to admission (including those admitted to advanced standing), promotion and graduation.

(*d*) Which give the major portion of their instruction after 4 o'clock in the afternoon.

(*e*) Which are privately owned and conducted for profit.

(*f*) Which for other specific reasons are not eligible for inclusion in Class B.

ESSENTIALS OF AN ACCEPTABLE MEDICAL COLLEGE

Revised to Aug. 1, 1920

1. The minimum requirement for admission to an acceptable medical college is a four-year high school education or its full equivalent and two years of work in a college of arts and sciences approved by the Council on Medical Education and Hospitals, as follows:

1. High School Requirements

(*a*) For admission to the two-year premedical college course, students shall have completed a four-year course of at least fifteen units in a standard accredited high school or other institution of standard secondary school grade, or have the equivalent as demonstrated by examinations conducted by the College Entrance Examination Board, or by the authorized examiner of a standard college or university approved by the Council on Medical Education and Hospitals. A detailed statement of attendance at the secondary school, and a transcript of the student's work, should be kept on file by the college authorities. This evidence of actual attendance at the secondary schools should be obtained, no matter whether the student is admitted to the freshman or to higher classes.

(*b*) Credits for admission to the premedical college course may be granted for the subjects shown in the following list and for any other subject counted by a standard accredited high school as a part of the requirements for its diploma, provided that at least eleven units must be offered in Groups I-V:

SCHEDULE OF SUBJECTS REQUIRED OR ACCEPTED FOR ENTRANCE TO THE PREMEDICAL COLLEGE COURSE

Subjects	Units*	Required
Group I, English—		
Literature and composition	3-4	3
Group II, Foreign Languages—		
Latin	1-4	2†
Greek	1-3	
French or German	1-4	
Other foreign languages	1-4	
Group III, Mathematics—		
Elementary algebra	1	1
Advanced algebra	½-1	..
Plane geometry	1	1
Solid geometry	½	..
Trigonometry	½	..
Group IV, History—		
Ancient history	½-1	1
Medieval and modern history	½-1	
English history	½-1	
American history	½-1	
Civil government	½-1	
Group V, Science—		
Botany	½-1	..
Zoology	½-1	..
Chemistry	1	..
Physics	1	..
Physiography	½-1	..
Physiology	½-1	..
Astronomy	½	..
Geology	½-1	..
Group VI, Miscellaneous—		
Agriculture	1-2	..
Bookkeeping	½-1	..
Business law	½	..
Commercial geography	½-1	..
Domestic science	1-2	..
Drawing, freehand and mechanical	½-2	..
Economics and economic history	½-1	..
Manual training	1-2	..
Music: Appreciation or harmony	1-2	..

* A unit is the credit value of at least thirty-six weeks' work of four or five recitation periods per week, each recitation period to be not less than forty minutes. In other words, a unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. A satisfactory year's work in any subject cannot be accomplished under ordinary circumstances in less than 120 sixty-minute hours, or their equivalent.

† Both of the required units of foreign language must be of the same language, but the two units may be presented in any one of the languages specified.

Of the fifteen units of high school work, eight units are required, as indicated in the foregoing schedule; the balance may be made up from any of the other subjects in the schedule.

2. Premedical College Course

(*c*) The minimum requirement for admission to acceptable medical schools, in addition to the high school work specified above, is sixty semester hours of collegiate work in a college approved[7] by the Council on Medical Education and Hospitals. The subjects included in the two years of college work should be in accordance with the following schedule:

SCHEDULE OF SUBJECTS OF THE TWO-YEAR PREMEDICAL COLLEGE COURSE

Sixty Semester Hours* Required	Semester Hours
Required Subjects:	
Chemistry (a)	12
Physics (b)	8
Biology (c)	8
English composition and literature (d)	6
Other nonscience subjects (e)	12
Subjects Strongly Urged:	
A modern foreign language (f)	6-12
Advanced botany or advanced zoology	3-6
Psychology	3-6
Advanced mathematics, including algebra and trigonometry	3-6
Additional courses in chemistry	3-6
Other Suggested Electives:	
English (additional), economics, history, sociology, political science, logic, mathematics, Latin, Greek, drawing.	

* A semester hour is the credit value of sixteen weeks' work consisting of one lecture or recitation period per week, each period to be not less than fifty minutes net, at least two hours of laboratory work to be considered as the equivalent of one lecture or recitation period.

Suggestions Regarding Individual Subjects

(*a*) *Chemistry.*—Twelve semester hours required of which at least eight semester hours must be in general inorganic chemistry, including four semester hours of laboratory work. In the interpretation of this rule work in qualitative analysis may be counted as general inorganic chemistry. The remaining four semester hours may consist of additional work in general chemistry or of work in analytic or organic chemistry. After Jan. 1, 1922, organic chemistry will be required.

(*b*) *Physics.*—Eight semester hours required, of which at least two must be laboratory work. It is urged that this course be preceded by a course in trigonometry.

(*c*) *Biology.*—Eight semester hours required, of which four must consist of laboratory work. The requirement may be satisfied by a course of eight semester hours in either general biology or zoology, or by courses of four semester hours each in zoology and botany, but not by botany alone.

(*d*) *English Composition and Literature.*—The usual introductory college course of six semester hours, or its equivalent, is required.

(*e*) *Nonscience Subjects.*—Of the sixty semester hours required as the measurement of two years of college work, at least eighteen, including the six semester hours of English, should be in subjects other than the physical, chemical or biologic sciences.

(*f*) *Foreign Language.*—A reading knowledge of a modern foreign language is strongly urged. French and German have the closest bearing on modern medical literature. If the reading knowledge in one of these languages is obtained on the basis of high school work, the student is urged to take the other language in his college course. It is not considered advisable, however, to spend more than twelve of the required sixty semester hours on foreign languages.

Recognition.—This two-year premedical course in both quantity and quality must be such as to make it acceptable as the equivalent of the first two years of the course in reputable, approved colleges of arts and sciences leading to the degree of Bachelor of Science.

3. Approved Colleges of Arts and Sciences

A tentative list of colleges of arts and sciences approved by the Council on Medical Education and Hospitals has been prepared, and will be occasionally revised. By an approved college (of arts and sciences) is meant one whose standing has been vouched for by some standardizing agency in whose methods the Council has confidence. To be recognized a college must have sufficient scientific equipment and maintain laboratories in the premedical sciences. It must have ample endowment to maintain a sufficient corps of teachers. Membership in some national organization or association of colleges will be favorably regarded and, in the absence of such membership, careful investigation will be made of the causes of exclusion. It must maintain national standards for admis-

7. A tentative list of approved colleges may be obtained on application to the American Medical Association, enclosing 6 cents.

sion to its freshman class. Undue liberality in the acceptance of certificates from secondary schools unendorsed by approved standardizing agencies will be registered by the Council as a failure to comply with its requirement and the college will be dropped from the approved list. No college will be approved by the Council which allows work *in absentia* or by correspondence courses to count toward a baccalaureate degree.

PREMEDICAL COURSES IN MEDICAL COLLEGES—JUNIOR COLLEGES

Premedcal college courses given in or by medical schools, by normal schools, or advance years taken in high schools, will not be considered as acceptable unless they have been investigated and approved by some association of colleges and secondary schools or other approved agency having to do with the standardizing of liberal arts colleges, and unless they are found to be a full equivalent of the first two years of the course leading to the Bachelor of Science degree.

4. The Medical School

ADMINISTRATION OF ENTRANCE REQUIREMENTS

2. The admission of students to the medical school must be in the hands of a responsible committee or examiner whose records shall always be open for inspection. Documentary evidence of the student's preliminary education should be obtained and kept on file. When the medical school is an integral part of the university, this work usually devolves on the university examiner. Unless the university examiner and his records are closely accessible, however, some officer at the medical school should obtain and keep on file documentary evidence of each student's preliminary education, including both high school and collegiate work. The records should show especially that the required amount of work in the premedical sciences, including laboratory experiments, has been completed.

OTHER MEDICAL SCHOOL REQUIREMENTS

3. The college should require that students be in actual attendance in the college *within the first week* of each annual session and thereafter.

4. Actual attendance at classes should be insisted on except for good cause, such as for sickness, and no credit should be given for any course where the attendance has been less than 80 per cent. of the full time.

5. (*a*) Full advanced standing may be granted to students only for work done in other acceptable medical schools, and in granting advanced standing there should be no discrimination against the college's full-course students. Official verification of the student's previous medical work should be obtained by direct correspondence with the college previously attended, and his preliminary qualifications should also be verified and recorded the same as for freshman students. (*b*) In *exceptional cases* students who possess the required premedical qualifications and who have completed three or more years of work in Class B medical schools may be given advanced standing but not higher than *entrance* to the third year (junior) class, and no credit should be given in any subject except on recommendation of the head of the department teaching that subject. (*c*) In *exceptional cases* also students who possess the required premedical qualifications and who have completed three or more years of work in Class C colleges may be given advanced standing but not higher than *entrance* to the second year (sophomore) class, and then only after thorough examinations in all first year subjects have been passed.

SUPERVISION, EQUIPMENT, TEACHERS

6. There should be careful and intelligent supervision of the entire school by the dean or other executive officer who holds, and has sufficient authority to carry out fair ideals of medical education as determined by the present day knowledge of medicine.

7. There should be a good system of records showing conveniently and in detail the credentials, attendance, grades and accounts of the students, by means of which an exact knowledge can be obtained regarding each student's work. Records should also be kept showing readily the attendance of patients at the teaching hospitals and dispensaries; the maternity cases attended by students, and the postmortem cases used in teaching.

8. The college curriculum should be fully graded and should cover four sessions of at least thirty-two weeks each, exclusive of time required for matriculation and holidays, and at least thirty hours per week of actual work. The courses offered in the various subjects should be set forth by departments (anatomy, physiology, etc.) in the annual announcement, showing for each course its number, subject, content, character (lecture, recitation, laboratory or clinic), length of time, when, where, and by whom given, and the amount of credit allowed. The courses for each class should also be clearly set forth in a printed class schedule, for the guidance of the students.

(*a*) The college should give two years of work consisting largely of laboratory work in well equipped laboratories of anatomy, histology, embryology, physiology, physiologic chemistry, bacteriology, pathology, pharmacology, therapeutics and clinical diagnosis. Present-day medical knowledge makes it essential that these subjects be in charge of full-time, well-trained teachers.

(*b*) Two years of clinical work, largely in hospitals and dispensaries, with courses in medicine (including physical diagnosis, pediatrics, nervous and mental diseases), surgery (including surgical anatomy and operative surgery on the cadaver), obstetrics, gynecology, laryngology, rhinology, ophthalmology, otology, dermatology, hygiene and medical jurisprudence. With the higher entrance requirements time is now available in the latter part of the second year for beginning courses in physical diagnosis and the principles of surgery.

(*c*) As soon as conditions warrant, relations should be established with a number of approved hospitals so that a fifth undergraduate year may be required to be spent by the student as an intern under the continued supervision of the medical school.

FACULTY

9. (*a*) The college should provide at least *eight expert thoroughly trained professors in the laboratory branches,* salaried so that they may devote their entire time to instruction and to that research without which they cannot well keep up with the rapid progress being made in their subjects.[8] For colleges having *sixty students or less* in each class, there should be at least one full-time salaried assistant each in the departments of (1) anatomy, (2) physiology, (3) pathology and bacteriology, and (4) physiologic chemistry and pharmacology. There should be also one additional assistant provided in each of these departments for *each additional thirty students enrolled.* This represents a low average of the full-time assistants already employed by the acceptable medical colleges.

(*b*) The faculty should be made up of graduates of institutions recognized as medical colleges and who have had a training in all departments of medicine. Nonmedical men should be selected as teachers in medical schools only under exceptional circumstances and only when medical men of equal special capacity are not available. The faculty should be organized, each department having its head professor, its associate professor, assistant professor, instructor, etc., each having his particular subjects for the teaching of which he is responsible to the head of the department.

CLINICAL FACILITIES AND INSTRUCTION

10. (*a*) The college should own or entirely control a hospital in order that students may come into close and extended contract with patients under the supervision of the attending staff. This hospital should be in close proximity to the college and have a daily average (for senior classes of 100 stu-

8. These professors should have a definite responsibility in the conduct of the college, and their first and chief interest should be the training of medical students. It is suggested that four of these professors be placed at the head of the departments of (*a*) anatomy, (*b*) physiology and physiologic chemistry, (*c*) pathology and bacteriology, and (*d*) pharmacology and therapeutics. The other four might with advantage be assigned, one each, to (*e*) histology and embryology, under the department of anatomy, and to the department of (*f*) pathology and bacteriology, and (*g*) physiology and pharmacology, and to the departments of (*h*) either internal medicine or surgery.

dents or *less*) of not less than 200 patients who can be utilized for clinical teaching, these patients to be of such character as to permit the students to see and study the common variety of surgical and medical cases as well as a fair number in each of the so-called specialties. In the use of this material *bedside and ward clinics* should be developed for sections of from five to ten students, and for the seniors, a certain number of patients in medicine, surgery and the specialties should be assigned to each student under a well supervised clinical clerk system. The treatment and care of these patients should be particularly observed and recorded by the student under the strict supervision of the intern, or the attending staff of the hospital.

(*b*) The college should also have ample hospital facilities for children's diseases, contagious diseases and nervous and mental diseases.

(*c*) The college should own or control a dispensary, or outpatient department, the attendance to be a daily average of 100 patients (visits) (for senior classes of 100 students *or less*), the patients to be carefully classified, good histories and records of the patients to be kept and the material to be well used. The attending staff should be made up of good teachers, should be well organized and be prompt and regular in attendance.

(*d*) At least six maternity cases should be provided for each senior student, who should have actual charge of these cases under the supervision of the attending physician. Careful records of each case should be handed in by the student.

(*e*) Facilities should be provided for at least thirty necropsies (for senior classes of 100 students *or less*) during each college session which are attended and participated in by senior students. These, as a rule, should be in the teaching hospital controlled by the medical school and performed by the professor of pathology. The so-called clinical-pathologic conferences should be more widely developed in connection with the postmortems.

OTHER TEACHING FACILITIES AND FINANCES

11. The college should have a working medical library, to include the more modern text and reference books with the *Index Medicus*, the Surgeon-General's Index and other serviceable indexes. The library should receive regularly thirty or more leading medical periodicals, the current numbers of which should be in racks or on tables easily accessible to the students. At the end of each year these periodicals should be bound and added to the files of bound periodicals. The library room should be properly lighted and heated, and open during all or the greater part of the day; it should be equipped with suitable card indexes as well as with tables and chairs, and have a competent librarian in charge.

12. There should be a working medical museum having its various anatomic, embryologic, pathologic and other specimens carefully prepared, labeled and indexed so that any specimen may be easily found and employed for teaching purposes. It is suggested that so far as possible with each pathologic specimen coming from postmortems there also be kept the record of the postmortem, the clinical history of the patient on whom the necropsy was held and microscopic slides showing the minute structures of the disease shown in the gross specimen. The museum furnishes an excellent means of correlating the work of the department of pathology with that of the clinical departments.

13. There should be sufficient dissecting material to enable each student individually to dissect at least the lateral half of the human cadaver, to provide cross-sections and other demonstration material and to allow of a thorough course for each senior in operative surgery on the cadaver.

14. For modern experimental laboratory work in physiology, pharmacology and bacteriology as well as for medical research, a supply of animals—frogs, turtles, rabbits and guinea-pigs, if not also cats and dogs—is essential. Proper provision, also, is necessary for the housing and care of such animals. In any use made of animals every precaution should be taken to prevent needless suffering, and work by students should be carefully supervised.

15. Each college should have a supply of such useful auxiliary apparatus as a stereopticon, a reflectoscope, carefully prepared charts, embryologic or other models, manikins; dummies for use in bandaging, a roentgen-ray and other apparatus now so generally used in medical teaching.

16. The college should show evidences of thorough organization and of reasonably modern methods in all departments, and evidences that the equipment and facilities are *being intelligently used* in the training of medical students.

17. A clear statement of the college's requirements for admission, tuition, time of attendance on the classes, sessions, courses offered and graduation should be clearly set forth, together with complete classified lists of its matriculants and latest graduating class in regular annual catalogues or announcements.

18. Statistics show[9] that modern medicine cannot be acceptably taught by a medical school depending solely on the income from students' fees. No medical school should expect to secure admission to, or be retained in Class A, therefore, which does not have an annual income of at least $25,000 in addition to the amount obtained from students' fees.

CLASSIFICATION OF MEDICAL COLLEGES

Revised to Aug. 1, 1920

CLASS A—ACCEPTABLE MEDICAL COLLEGES

ARKANSAS

University of Arkansas Medical Department*....Little Rock

CALIFORNIA

Leland Stanford Junior Univ. School of Med..San Francisco
University of California Medical School.....San Francisco

COLORADO

University of Colorado School of Med.....Boulder-Denver

CONNECTICUT

Yale University School of Medicine.....New Haven

DISTRICT OF COLUMBIA

Georgetown University School of Medicine.....Washington
George Washington University Medical School..Washington
Howard University School of Medicine[1].....Washington

GEORGIA

Emory University School of Medicine[2].....Atlanta
University of Georgia Medical Department[3].....Augusta

ILLINOIS

Loyola University School of Medicine[4].....Chicago
Northwestern University Medical School.....Chicago
Rush Medical College (University of Chicago).....Chicago
University of Illinois College of Medicine.....Chicago

INDIANA

Indiana Univ. School of Med.....Bloomington-Indianapolis

IOWA

State University of Iowa College of Medicine....Iowa City

KANSAS

University of Kansas School of Med.....Lawrence-Rosedale

KENTUCKY

University of Louisville Medical Department[5].....Louisville

LOUISIANA

Tulane Univ. of Louisiana School of Med.....New Orleans

MAINE

Bowdoin Medical School.....Brunswick-Portland

MARYLAND

Johns Hopkins University Medical Department....Baltimore
University of Maryland School of Medicine and
the College of Physicians and Surgeons.....Baltimore

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9. See "Medical College Finances," J. A. M. A., April 8, 1916, p. 1115.

* Since 1919, gives only the first two years of the medical course. Raised to Class A, June 9, 1919.

1. Rating raised to Class A June 6, 1910.
2. Rating raised to Class A Feb. 24, 1914; formerly the Atlanta Medical College.
3. Class A rating restored Feb. 24, 1913.
4. Rating raised to Class A March 1, 1920.
5. Rating raised to Class A June 6, 1910.

MASSACHUSETTS

Boston University School of Medicine.....Boston
Medical School of Harvard University.....Boston
Tufts College Medical School.....Boston

MICHIGAN

Detroit College of Medicine and Surgery*.....Detroit
University of Michigan Medical School.....Ann Arbor
University of Mich. Homeopathic Med. School....Ann Arbor

MINNESOTA

University of Minnesota Medical School.....Minneapolis

MISSISSIPPI

University of Mississippi School of Medicine*.....Oxford

MISSOURI

St. Louis University School of Medicine.....St. Louis
University of Missouri School of Medicine*.....Columbia
Washington University Medical School.....St. Louis

NEBRASKA

John A. Creighton Medical College[1].....Omaha
University of Nebraska College of Medicine.....Omaha

NEW HAMPSHIRE

Dartmouth Medical School*.....Hanover

NEW YORK

Albany Medical College.....Albany
Columbia Univ. Coll. of Phys. and Surgs....New York City
Cornell University Medical College.....New York City
Fordham University School of Medicine[2]....New York City
Long Island College Hospital[3].....Brooklyn
Syracuse University College of Medicine.....Syracuse
University and Bellevue Hospital Med. Coll..New York City
University of Buffalo Department of Medicine.....Buffalo

NORTH CAROLINA

University of North Carolina School of Med.*...Chapel Hill
Wake Forest College School of Medicine*....Wake Forest

NORTH DAKOTA

University of North Dakota School of Medicine*..University

OHIO

Ohio State University College of Medicine.....Columbus
University of Cincinnati College of Medicine....Cincinnati
Western Reserve University School of Medicine....Cleveland

OKLAHOMA

Univ. of Oklahoma School of Med.[4]..Norman-Oklahoma City

OREGON

University of Oregon Medical School.....Portland

PENNSYLVANIA

Hahnemann Medical College and Hospital.....Philadelphia
Jefferson Medical College of Philadelphia.....Philadelphia
University of Pennsylvania School of Med.....Philadelphia
University of Pittsburgh School of Medicine[5]....Pittsburgh
Woman's Medical College of Pennsylvania.....Philadelphia

SOUTH CAROLINA

Medical College of the State of South Carolina[6]..Charleston

SOUTH DAKOTA

University of South Dakota College of Medicine*..Vermilion

TENNESSEE

University of Tennessee College of Medicine[7].....Memphis
Vanderbilt University Medical Department.....Nashville

TEXAS

Baylor University College of Medicine[8].....Dallas
University of Texas Department of Medicine.....Galveston

UTAH

University of Utah School of Medicine*.....Salt Lake City

VERMONT

University of Vermont College of Medicine.....Burlington

6. Class A rating restored June 21, 1914.
7. Class A rating restored Feb. 4, 1917.
8. Class A rating restored Feb. 24, 1914.
9. Class A rating restored June 21, 1914.
10. Rating raised to Class A March 1, 1920.
11. Rating raised to Class A June 6, 1910.
12. Class A rating restored Feb. 6 1916.
13. Rating raised to Class A June 21, 1914.
14. Rating raised to Class A June 12, 1916.

VIRGINIA

Medical College of Virginia.....Richmond
University of Virginia Department of Med...Charlottesville

WEST VIRGINIA

West Virginia Univ. School of Medicine*[9].....Morgantown

WISCONSIN

Marquette University School of Medicine[10].....Milwaukee
University of Wisconsin Medical School*.....Madison

Total, 70.

CLASS B—COLLEGES NEEDING GENERAL IMPROVEMENTS TO BE MADE ACCEPTABLE

ALABAMA

University of Alabama School of Medicine[11].....Mobile

CALIFORNIA

College of Medical Evangelists[12]...Loma Linda-Los Angeles
University of Southern California Medical Department (College of Physicians and Surgeons)[13].....Los Angeles

ILLINOIS

Hahnemann Medical College and Hospital[14].....Chicago

NEW YORK

New York Homeopathic Medical College and Flower Hospital[15].....New York City

OHIO

Eclectic Medical College.....Cincinnati
Ohio State Univ. Coll. of Homeopathic Med[16].....Columbus

TENNESSEE

Meharry Medical College[17].....Nashville

Total, 7.

CLASS C—COLLEGES REQUIRING A COMPLETE REORGANIZATION TO MAKE THEM ACCEPTABLE

CALIFORNIA

College of Physicians and Surgeons[18].....San Francisco
Oakland College of Medicine and Surgery[19].....Oakland

ILLINOIS

Chicago Medical School[20].....Chicago

MASSACHUSETTS

College of Physicians and Surgeons[21].....Boston
Middlesex College of Medicine and Surgery[22]....Cambridge

MISSOURI

Kansas City University of Phys. and Surgs.[23]....Kansas City
Kansas City College of Medicine and Surgery[24]...Kansas City
St. Louis College of Physicians and Surgeons[25]....St. Louis

15. Class A rating restored Feb. 4, 1917.
16. Rating raised to Class A Feb. 15, 1915.
17. Rating dropped to Class B June 1, 1920. It is being reorganized at Tuscaloosa as a two-year medical school.
18. Rating raised to Class B Feb. 3, 1918.
19. Suspended in 1920.
20. Rating dropped to Class B June 3, 1912.
21. Rating dropped to Class B Feb. 15, 1915.
22. Rating raised to Class B Feb. 4, 1917.
23. Rating dropped to Class B Feb. 24, 1914.
24. Suspended medical teaching in 1918; retains a nominal existence till 1921 to grant degrees to students of three remaining classes who are completing their medical education elsewhere.
25. Rated in Class B June 6, 1910; rating dropped to Class C Feb. 3, 1918. Suspended medical teaching in 1918; retains a nominal existence till 1921 to grant degrees to students of three remaining classes who are completing their medical education elsewhere.
26. Formerly the Chicago Hospital College of Medicine. Last inspected April 23, 1918.
27. Rated in Class C since 1907. Last inspected Jan. 7, 1918.
28. This is the medical department of the so-called "University of Massachusetts." When last inspected—Jan. 8, 1918—this school was in close association with an osteopathic college and was granting liberal advanced standing for osteopathic courses. It was rated in Class C Feb. 4, 1918.
29. Formerly the Central College of Osteopathy; in 1917 under an amended charter took the name of Central College Medical Department; assumed present title in 1918. Rated in Class C March 15, 1918. Still teaches both osteopathy and medicine in the same building and by the same faculty.
30. This institution is reported not recognized by the Missouri State Board of Health. It is an offshoot of a Class C institution likewise reported not recognized by the Missouri State Board of Health. No higher rating than Class C could be granted it pending an inspection which it has refused.
31. Rating dropped to Class C July 1, 1909. In 1915 it merged with the Medical Department of the National University of Arts and Sciences, but in 1917 it was reestablished. In 1918 reported not recognized by the Missouri State Board of Health.

PENNSYLVANIA

Temple University Department of Medicine[33].....Philadelphia

TENNESSEE

University of West Tenn. Coll. of Med. and Surg..Memphis

Total, 10.

CLASSIFICATION OF CANADIAN MEDICAL COLLEGES

CLASS A

University of Toronto Faculty of Medicine....Toronto, Ont.
McGill University Faculty of Medicine.....Montreal, Que.

CLASS B

Univ. of Manitoba, Manitoba Med. College..Winnipeg, Man.
Dalhousie University Faculty of Medicine....Halifax, N. S.
Queen's University Faculty of Medicine[34]....Kingston, Ont.
Western University Faculty of Medicine[34].....London, Ont.
Montreal School of Medicine and Surgery....Montreal, Que.
Laval University Faculty of Medicine.....Quebec, Que.

The University of Alberta at Edmonton, besides the pre-medical year, gives only the first two years of the medical course as measured by that of the medical schools of the United States. It has not been classified.

ENTRANCE REQUIREMENTS OF MEDICAL COLLEGES

Seventy-seven medical schools are now requiring, as a minimum for entrance, *two years* or more of work in a college of liberal arts in addition to a four-year high-school education, and voluntarily submit reports to the Council by which the enforcement of their published requirements may be verified. The years when each college puts into effect, respectively, the one-year and the two-year requirements, and the rating of each college, are as follows:

College	One Year	Two Years	College Rating
ALABAMA			
University of Alabama School of Medicine	1914	1915	B
ARKANSAS			
University of Arkansas Medical Department	1915	1918	A
CALIFORNIA			
College of Medical Evangelists	1914	1915	B
University of Southern California Med. Dept.	1914	1916	B
Leland Stanford Junior University School of Med.	....	1909	A
University of California Medical School	....	1905	A
COLORADO			
University of Colorado School of Medicine	....	1910	A
CONNECTICUT			
Yale University School of Medicine	....	1909	A
DISTRICT OF COLUMBIA			
Georgetown University School of Medicine	....	1912	A
George Washington University Medical School	1914	1918	A
Howard University School of Medicine	1910	1914	A
GEORGIA			
Emory University School of Medicine, Atlanta	1914	1918	A
University of Georgia Medical Department	1914	1918	A
ILLINOIS			
Loyola University School of Medicine	1915	1918	A
Hahnemann Medical College and Hospital	1914	1916	B
Northwestern University Medical School	1908	1911	A
Rush Medical College (University of Chicago)	....	1904	A
University of Illinois College of Medicine	1913	1914	A
INDIANA			
Indiana University School of Medicine	1909	1910	A
IOWA			
State University of Iowa College of Medicine	1909	1910	A
KANSAS			
University of Kansas School of Medicine	....	1909	A
KENTUCKY			
University of Louisville Medical Department	1914	1918	A
LOUISIANA			
Tulane University of Louisiana School of Medicine	1910.	1918	A
MAINE			
Bowdoin Medical School	1912	1916	A
MARYLAND			
Johns Hopkins University Medical Department	....	1893	A
University of Maryland School of Medicine and College of Physicians and Surgeons	1914	1918	A
MASSACHUSETTS			
Boston University School of Medicine	1914	1916	A
Medical School of Harvard University	....	1900	A
Tufts College Medical School	1914	1918	A
MICHIGAN			
Detroit College of Medicine and Surgery	1914	1918	A
University of Michigan Medical School	....	1909	A
University of Michigan Homeopathic Medical School	1912	1916	A
MINNESOTA			
University of Minnesota Medical School	....	1907	A
MISSISSIPPI			
University of Mississippi School of Medicine	1914	1918	A
MISSOURI			
St. Louis University School of Medicine	1910	1918	A
University of Missouri School of Medicine	1906	1910	A
Washington University Medical School	1910	1912	A
NEBRASKA			
John A. Creighton Medical College	1914	1918	A
University of Nebraska College of Medicine	1908	1909	A
NEW HAMPSHIRE			
Dartmouth Medical School	....	1910	A
NEW YORK			
Albany Medical College	1914	1918	A
Columbia University College of Phys. and Surg.	....	1910	A
Cornell University Medical College	....	1908	A
Long Island College Hospital	1914	1918	A
New York Homeo. Med. Coll. and Flower Hospital	1915	1919	B
Syracuse University College of Medicine	1909	1910	A
University and Bellevue Hospital Medical College	1912	1918	A
University of Buffalo Department of Medicine	1914	1918	A
NORTH CAROLINA			
Wake Forest College School of Medicine	....	1908	A
University of North Carolina School of Medicine	1910	1917	A
NORTH DAKOTA			
University of North Dakota School of Medicine	....	1907	A
OHIO			
Eclectic Medical College	1915	1918	B
Ohio State University College of Medicine	1914	1915	A
Ohio State Univ. Coll. of Homeopathic Medicine	1915	1916	B
University of Cincinnati College of Medicine	1910	1913	A
Western Reserve University School of Medicine	....	1901	A
OKLAHOMA			
University of Oklahoma School of Medicine	1914	1917	A
OREGON			
University of Oregon Department of Medicine	1910	1915	A
PENNSYLVANIA			
Hahnemann Medical College and Hospital	1914	1917	A
Jefferson Medical College	1914	1917	A
University of Pennsylvania School of Medicine	1909	1910	A
University of Pittsburgh School of Medicine	1911	1913	A
Woman's Medical College of Pennsylvania	1914	1915	A
SOUTH CAROLINA			
Medical College of the State of South Carolina	1914	1916	A
SOUTH DAKOTA			
University of South Dakota College of Medicine	1908	1909	A
TENNESSEE			
Meharry Medical College	1914	1918	B
Vanderbilt University Medical Department	1914	1918	A
University of Tennessee College of Medicine	1914	1918	A
TEXAS			
Baylor University College of Medicine	1913	1918	A
University of Texas Department of Medicine	1910	1917	A
UTAH			
University of Utah School of Medicine	1909	1910	A
VERMONT			
University of Vermont College of Medicine	1912	1918	A
VIRGINIA			
Medical College of Virginia	1914	1915	A
University of Virginia Department of Medicine	1910	1917	A
WEST VIRGINIA			
West Virginia University School of Medicine	1911	1917	A
WISCONSIN			
Marquette University School of Medicine	1913	1915	A
University of Wisconsin Medical School	....	1907	A

Total, 77.

The eight following medical colleges either have not announced the higher entrance requirements or such evidence as has been received does not show they have been enforced for all students enrolled:

	Rating
Chicago Medical School	C
College of Physicians and Surgeons, Boston	C
Middlesex College of Medicine and Surgery, Cambridge, Mass.	C
Kansas City College of Medicine and Surgery	*

* This college is an offshoot of the Eclectic Medical University; has refused to have an inspection made. It is reported not recognized by the Missouri State Board of Health and by the licensing boards of 32 other states.

32. Rating raised to Class B June 6, 1910; dropped again to Class C June 1, 1920.
33. Rating dropped to Class C Feb. 6, 1916; restored to Class B Feb. 3, 1918.
34. Rating raised to Class B Feb. 4, 1917.

Kansas City University of Physicians and Surgeons	C†
St. Louis College of Physicians and Surgeons	C
Temple University Department of Medicine	C
University of West Tenn. Coll. of Med. and Surg., Memphis	C

† This college was formerly the Central College of Osteopathy; in 1916 it assumed the title Central College Medical Department, and took its present name in 1918. The same faculty teaches courses in both medicine and osteopathy.

Scholarships in Medical Schools

As evidence that provision is being made for worthy students, regardless of their financial status, 348 scholarships are reported this year in the following thirty-eight medical schools:

University of Alabama School of Medicine, Mobile	67
Leland Standford Junior University Medical School*	3
University of California Medical School,* San Francisco	3
University of Colorado School of Medicine,* Boulder	1
Yale University School of Medicine,* New Haven, Conn.	2
Hahnemann Medical College and Hospital of Chicago*	6
Loyola University School of Medicine, Chicago	3
Rush Medical College, Chicago	7
University of Illinois College of Medicine,* Chicago	7
Indiana University School of Medicine, Indianapolis	12
State University of Iowa College of Medicine	1
University of Kansas School of Medicine*	17
Johns Hopkins University Medical Department, Baltimore	6
University of Maryland School of Medicine,* Baltimore	6
Harvard Medical School,* Boston	30
Boston University School of Medicine*	50
Detroit College of Medicine and Surgery	8
Washington University Medical School, St. Louis	4
Dartmouth Medical School,* Hanover, N. H.	2
University of Buffalo Department of Medicine*	2
University of Cincinnati College of Medicine*	12
Western Reserve University School of Medicine, Cleveland	1
University of Oregon Department of Medicine,* Portland	3
Hahnemann Medical College and Hospital of Philadelphia*	12
Jefferson Medical College of Philadelphia	2
Temple University Department of Medicine, Philadelphia	3
University of Pennsylvania School of Medicine,* Philadelphia	4
Woman's Medical College of Pennsylvania,* Philadelphia	24
Medical College of the State of South Carolina, Charleston	8
University of Tennessee College of Medicine, Memphis	14
Vanderbilt University Medical Department, Nashville, Tenn.	4
Baylor University College of Medicine, Dallas Texas	5
University of Texas Department of Medicine,* Galveston	1
University of Wisconsin Medical School*	6
University of Vermont College of Medicine*	1
Medical College of Virginia, Richmond	10
University of Virginia Department of Medicine,* Charlottesville	2
Total in 38 medical schools	348

* Have loan funds also.

Loan Funds

Besides the twenty-one colleges marked by an asterisk (*) in the above list which have loan funds for deserving but needy students, such funds are available also at the six following medical schools:

College of Medical Evangelists, Loma Linda, Calif.
Tulane University of Louisiana School of Medicine, New Orleans, La.
University of Missouri School of Medicine, Columbia, Mo.
University of Nebraska College of Medicine, Omaha, Neb.
Wake Forest College School of Medicine, Wake Forest, N. C.
University of North Dakota, School of Medicine, University, N. D.

DESCRIPTION OF MEDICAL COLLEGES

Below are given brief descriptions of the medical colleges in the United States and Canada that are legally chartered to teach medicine, several of which do not grant degrees. The name, address, year of organization, history and date when first class graduated are given in each instance. Unless otherwise stated, a class graduated each subsequent year. Where official reports have been received from the college, information regarding faculty, entrance requirements, length of term, fees, students (excluding specials and postgraduates), graduates, name of dean and next session is given without discrimination, regardless as to whether the college is sectarian or not. In a few instances in which such reports were not received, the information published is from other reliable sources. Figures for graduates include all who graduated since July 1, 1919. Extract of rules and the membership of the Association of American Medical Colleges are shown following the list of colleges. Figures showing population of cities and states are taken from the United States Census Bureau's estimate for 1918, except that in cities marked with an asterisk (*) the census returns for 1920 have been given. Statements have been added showing the preliminary requirements held by state licensing boards where those requirements include one or two years of collegiate work. Ten states, Alaska (Ter.), Illinois, Iowa, Michigan, New Jersey, North Dakota, Pennsylvania, Rhode Island, Texas and Washington, require also a year's hospital internship as an essential qualification for a license.

* Figures from 1920 Census returns.

ALABAMA

Alabama, population 2,395,270, has one medical college, the School of Medicine of the University of Alabama, located in Tuscaloosa, a city with a population of 11,996.*

In order to secure licenses to practice medicine in Alabama, students matriculating in the session of 1915-16 and thereafter must have completed two years of work in an approved college of liberal arts, including courses in physics, chemistry, biology and a modern language, prior to entering on the study of medicine. This applies to all graduates of 1919 and thereafter.

Tuscaloosa

University of Alabama School of Medicine, University Campus, Tuscaloosa.—Organized in 1859 at Mobile as the Medical College of Alabama. Classes graduated in 1861 and subsequent years excepting 1862 to 1868, inclusive. Reorganized in 1897 as the medical department of the University of Alabama. Present title assumed in 1907, when all property was transferred to the University of Alabama. In 1920 clinical teaching was suspended and the medical school was removed to the university campus at Tuscaloosa. During the next year only the work of the freshman year will be given. In 1921-1922 and thereafter the first two years of the medical course will be given. Total registration for 1919-1920 was 51; graduates, 10. The fifty-fifth session begins Sept. 6, 1920, and ends May 25, 1921.

ARKANSAS

Arkansas, population 1,792,965, has one medical college, the Medical Department of the University of Arkansas, located in Little Rock, a city of 64,997.* Hereafter it offers only the courses of the first two years of the medical course.

To secure licenses to practice medicine in Arkansas, students matriculating in the session of 1918-19 and thereafter must have completed two years of collegiate work, including college courses in physics, chemistry, biology and a modern language before beginning the study of medicine. This applies to all graduates of 1922 and thereafter.

Little Rock

University of Arkansas Medical Department, Markham and Center Streets.—Organized in 1879 as the Medical Department of Arkansas Industrial University. It assumed the present title in 1899. In 1911 the College of Physicians and Surgeons united with it and the new school was made an integral part of the University of Arkansas. The first class was graduated in 1880. Clinical teaching suspended in 1919. The faculty consists of 8 professors and 8 lecturers and assistants, total 16. Entrance requirements are two years of collegiate work beyond a four-year high school course. The course of study covers two years of thirty-two weeks each. The fees are $60 each year. The Dean is Dr. Morgan Smith. Total registration 1919-1920 was 31; graduates, 6. The forty-second session begins Sept. 20, 1920, and ends June 8, 1921.

CALIFORNIA

California, population 3,119,412, has three medical colleges. Two are located in San Francisco, a city of 508,410 * inhabitants. They are Leland Stanford Junior University School of Medicine and the College of Medicine of the University of California. The College of Medical Evangelists is located at Loma Linda and Los Angeles, the latter city having a population of 575,480.*

To secure licenses to practice medicine in California under the "physician's and surgeon's" certificate, students matriculating in medical colleges in and after the session of 1915-16, prior to such matriculation, must have completed at least one year of recognized collegiate work including college courses in physics, chemistry, biology and a modern language. This applies to all graduates of 1919 and thereafter.

Berkeley-San Francisco

University of California Medical School, University Campus, Berkeley; Second and Parnassus Avenues, San Francisco.—Organized

in 1863 as the Toland Medical College. The first class graduated in 1864. In 1872 it became the Medical Department of the University of California. In 1909 the College of Medicine of the University of Southern California, at Los Angeles, by legislative enactment, became a clinical department. This Los Angeles portion was changed to a graduate school in 1914. In 1915 the Hahnemann Medical College of the Pacific was merged, and elective chairs in homeopathic materia medica and therapeutics were provided. Two years (in and after August, 1922, three years) of collegiate work are required for admission. The work of the first year and a half is given at Berkeley and the work of the last two and a half years at San Francisco. The faculty is composed of 47 professors and 152 associates and assistants, a total of 199. The course covers five years of nine months each, the fifth year to consist of an internship or of special work in a department of the medical school. Fees for the four years, respectively, are $200, $155, $160 and $150. The Acting Dean is Dr. Wallace I. Terry, San Francisco. Total registration for 1919-1920 was 214; graduates, 21. The forty-eighth session begins Aug. 16, 1920, and ends May 11, 1921.

Loma Linda-Los Angeles

COLLEGE OF MEDICAL EVANGELISTS.—Organized in 1909. The faculty numbers 109. The first class graduated in 1914. The laboratory departments are at Loma Linda; the clinical departments at Los Angeles. The course extends over four years of nine months each. Two years of college work are required for admission. The total fees for the four years, respectively, are $221, $216, $201 and $211. The Dean is Dr. P. T. Magan. The total registration for 1919-1920 was 101; graduates 14. The twelfth session begins Sept. 5, 1920, and ends May 26, 1921.

San Francisco-Palo Alto

LELAND STANFORD JUNIOR UNIVERSITY SCHOOL OF MEDICINE, University Campus, Palo Alto, and Sacramento and Webster Streets, San Francisco.—Organized in 1908 when, by an agreement, the interests of Cooper Medical College were taken over. The first class was graduated in 1913. The faculty consists of 56 professors and 56 lecturers, assistants, etc., a total of 112. Three years of collegiate work are required for admission. The school has the quarter system and the completion of any three quarters constitutes a college year. The course covers five years of nine months each, including a year of practical or intern work. The total fees for each of the first four years is $186. The Dean is Dr. W. Ophüls, San Francisco. The total registration for 1919-1920 was 137; graduates, 20. The eleventh session begins Oct. 1, 1920, and ends June 17, 1921.

COLORADO

Colorado, with a population of 1,014,581, has one medical college, the University of Colorado School of Medicine. The first two years of the course are given at Boulder, the seat of the university, while the last two, or clinical years, are given in Denver, which has a population of 256,369.*

The Colorado State Board of Medical Examiners will register without further examination graduates of medical colleges in good standing who present licenses issued after examination by any other licensing board. The law permits any one, graduate or nongraduate, to try the board's written examination. No graduate of 1914 or thereafter is eligible to obtain a license in Colorado, or indorsement of his credentials, unless he graduated from a medical college which, at the time he matriculated, required at least two years' study, without conditions, in an accredited college of liberal arts, and this work must have included courses in physics, chemistry, biology and one modern language.

Boulder-Denver

UNIVERSITY OF COLORADO SCHOOL OF MEDICINE.—Organized in 1883. Classes were graduated in 1885 and in all subsequent years except 1898 and 1899. Denver and Gross College of Medicine was merged Jan. 1, 1911. The faculty embraces 12 professors, 20 associate and assistant professors, and 29 lecturers, instructors and assistants, a total of 61. The work embraces a graded course of four years of nine months each. The entrance requirements are two years of college work counting toward a degree in arts in an accredited college or university. The fees for residents of Colorado, for each of the four years are, respectively, $106, $106, $98 and $103, and $30 more each year for nonresidents. The Dean is Dr. Charles N. Meader. The total registration for 1919-1920 was 71; graduates, 17. The thirty-ninth session begins Sept. 27, 1920, and ends June 13, 1921.

CONNECTICUT

Connecticut, with a population of 1,286,268, has one medical college, Yale University, School of Medicine, located in New Haven, population 162,390.*

Candidates for license to practice medicine in Connecticut who graduate in 1914 or thereafter are not eligible unless, prior to entering on the study of medicine, they had completed, in addition to an accredited four-year high school education, at least nine months of collegiate work including college courses in physics, chemistry and general biology.

New Haven

YALE UNIVERSITY SCHOOL OF MEDICINE, 150 York Street and Congress Avenue and Cedar Street.—Chartered in 1810 as the Medical Institution of Yale College. Organized in 1812; instruction began in 1813; first class graduated in 1814. A new charter in 1879 changed the name to the Medical Department of Yale College. In 1884, the Connecticut Medical Society surrendered such authority as had been granted by the first charter. In 1887, Yale College became Yale University. The faculty consists of 24 professors and 71 lectures and assistants, a total of 95. The requirements for admission are two years of collegiate work plus evidence of satisfactory completion of courses in general physics, general inorganic chemistry, general biology, organic chemistry and physical chemistry or laboratory physics, all reasonably equivalent to the courses in these subjects in Yale University. The student also must have a reading knowledge of German. The course covers four years of nine months each. The fees for the four years, respectively, are approximately $205, $200, $200 and $210. The Dean is Dr. Milton C. Winternitz. The total registration for 1919-1920 was 88; graduates, 19. The one hundred and eighth session begins Sept. 30, 1920, and ends June 22, 1921.

DISTRICT OF COLUMBIA

The District of Columbia, population 437,571,* has three medical colleges; George Washington University Medical School, Georgetown University, School of Medicine and Howard University, School of Medicine.

Washington

GEORGE WASHINGTON UNIVERSITY MEDICAL SCHOOL, 1335 H Street, N.-W.—Organized in 1825 as the Medical Department of Columbian College. Also authorized to use the name National Medical College. Classes were graduated in 1826 and in all subsequent years, except 1834 to 1838, and 1861 to 1863, inclusive. The original title was changed to Medical Department of Columbian University in 1873. In 1903 it absorbed the National University Medical Department. In 1904, by an act of Congress, the title of George Washington University was granted to the institution. The faculty is composed of 48 professors and 47 instructors, demonstrators and assistants, a total of 95. Two years of collegiate work are required for admission. The course covers four years of thirty-two weeks each. The total fees are $200 each year. The Dean is Dr. William C. Borden. The total registration for 1919-1920 was 114; graduates, 21. The ninety-ninth session begins Sept. 29, 1920, and ends June 8, 1921.

GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE, 920 H Street, N.-W.—Organized in 1851. The first class graduated in 1852. The faculty contains 21 professors, 69 instructors and assistants; total, 90. Two years of collegiate work are required for entrance. The course of study covers four terms of eight and one half months each. The fees for each of the four sessions, respectively, are $205, $200, $200 and $210. The Dean is Dr. George M. Kober. The registration for 1919-1920 was 120; graduates, 19. The seventieth session begins Sept. 24, 1920, and ends June 11, 1921.

HOWARD UNIVERSITY SCHOOL OF MEDICINE, Fifth and W Streets, N.-W.—Chartered in 1867. Organized in 1869. The first class graduated in 1871. Colored students compose a majority of those in attendance. The faculty comprises 15 professors and 24 lecturers and assistants, 39 in all. The admission requirements are two years of collegiate work, including physics, chemistry, botany and zoology, English and two years of French or German. The course covers four years of thirty-two weeks each. The fees of each of the four sessions, respectively, are $165, $155, $155 and $162. The Dean is Dr. Edward A. Balloch. Registration for 1919-1920 was 113; graduates, 27. The fifty-third session begins Oct. 1, 1920, and ends June 10, 1921.

GEORGIA

Georgia, population 2,935,617, has two medical colleges, University of Georgia, Medical Department, located in Augusta, population 52,548,* and the Emory University School of Medicine in Atlanta, a city of 200,616.*

In order to secure a license to practice medicine in Georgia, students matriculating in the session of 1918-19 and thereafter must have completed two years of work in an approved college of liberal arts and sciences, including courses in physics, chemistry and biology, prior to entering on the study of medicine. This applies to all graduates of 1922 and thereafter.

Atlanta

EMORY UNIVERSITY SCHOOL OF MEDICINE, 94 N. Butler Street.—Organized in 1854. Classes graduated 1855 to 1861, when it suspended. Reorganized in 1865. A class graduated in 1865 and each subsequent year except 1874. In 1898 it merged with the Southern Medical College (organized in 1878), taking the name of Atlanta College of Physicians and Surgeons. In 1913 it merged with the Atlanta School of Medicine (organized in 1905), reassuming the name of Atlanta Medical College. Became the Medical Department of Emory University in 1915; assumed present title in 1917. Two years of collegiate work are required for entrance. The faculty numbers 98. The course of study is four years of thirty-two weeks each. The fees for each of the four years, respectively, are $172, $160, $165 and $180. The Dean is Dr. W. S. Elkin.

Total registration for 1919-1920 was 174; graduates, 28. The next session begins Sept. 21, 1920, and ends June 6, 1921.

Augusta

UNIVERSITY OF GEORGIA, MEDICAL DEPARTMENT, University Place.—Organized in 1828 as the Medical Academy of Georgia, the name being changed to the Medical College of Georgia in 1829. Since 1873 it has been known as the Medical Department of the University of Georgia. Entire property transferred to the university in 1911. Classes were graduated in 1833 and in all subsequent years except 1862 and 1863. The faculty includes 16 professors and 30 assistants, 46 in all. Two years of collegiate work are required for entrance. The course is four years of thirty-four weeks each. Fees are $5 for matriculation and $60 each year for residents of Georgia and $150 each year for nonresidents. The Dean is Dr. W. H. Doughty, Jr. The total registration for 1919-1920 was 64; graduates, 15. The eighty-ninth session begins Sept. 15, 1920, and ends May 30, 1921.

ILLINOIS

Illinois, population 6,317,734, has six medical colleges, two of which give instruction at night, all located in Chicago, a city of 2,701,212* inhabitants, and are as follows: Rush Medical College, Northwestern University Medical School, University of Illinois College of Medicine, Loyola University School of Medicine, Hahnemann Medical College and Hospital and the Chicago Medical School.

To be eligible for license to practice medicine in Illinois, students matriculating in the sessions of 1915-16 and of 1918-19, in addition to an accredited four-year high school education, must have completed, respectively, one year and two years of collegiate work including courses in physics, chemistry, biology and a modern language, to be taken either in a preliminary year given by a recognized medical college, or in an approved college of liberal arts. Graduates of 1923 and thereafter must have completed also a year's internship in a hospital.

Chicago

RUSH MEDICAL COLLEGE.—Founded in 1837; organized in 1843; was the medical department of Lake Forest University from 1887 until 1898, when it became affiliated with the University of Chicago. The first class graduated in 1844. The faculty is composed of 118 professors, 186 associates, instructors, etc., a total of 304. The requirements for admission are two years of college work, including courses in college chemistry, physics and biology, and a reading knowledge of German or French. Classes are limited to 100 students in each of the freshman and sophomore classes, and to 120 students in each of the clinical years. No application for admission is accepted after September 1. The school operates under the "quarter system" in which the year is divided into four quarters of twelve weeks each; the completion of the work of three of these quarters gives credit for a college year. The course covers four years of eight and a half months each, and a fifth year, consisting of a hospital internship or of a fellowship in one of the departments. All freshman and sophomore studies are given at the University of Chicago. The clinical years are given in the building at the corner of Wood and Harrison streets. The tuition fees for each of the four years, respectively, are $225, $225, $235 and $235. A matriculation fee of $5 is paid but once, and there are incidentals amounting to from $5 to $7 annually. The Deans are Dr. Frank Billings and Dr. John M. Dodson. Total registration for 1919-1920 was 672; graduates, 115. One hundred and twenty-six other students completed the work of the fourth year, and will receive their degrees when a hospital internship has been completed. The seventy-seventh session begins Oct. 1, 1920, and ends June 15, 1921.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, 2421 South Dearborn Street.—Organized in 1859 as the Medical Department of Lind University. First class graduated in 1860. In 1864 it became independent as the Chicago Medical College. It united with Northwestern University in 1869, but retained the name of Chicago Medical College until 1891, when the present name was taken. Became an integral part of Northwestern University in 1905. The faculty comprises 60 professors and 112 lecturers and assistants, a total of 172. The requirements for admission are such as will admit to the College of Liberal Arts of Northwestern University, plus two years of college work, including courses in physics, chemistry, biology and a modern language. The course covers four years of eight months each. The fees for the four years, respectively, are $210, $205, $196 and $190. The Dean is Dr. Arthur I. Kendall. The total registration for 1919-1920 was 408; graduates, 73. The sixty-first session begins Oct. 5, 1920, and ends June 11, 1921.

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE, 508 S. Honore Street.—Organized in 1882 as the College of Physicians and Surgeons. The first class graduated in 1883. It became the Medical Department of the University of Illinois by affiliation in 1897 and an integral part in 1910. The relationship with the university was canceled in June, 1912, but restored in March, 1913, when the present title was assumed. Two years of collegiate work are required for admission. The curriculum covers four years of nine months each, and a year's internship in an approved hospital. The faculty is composed of 55 professors, 99 assistants and instructors, a total of 154. The total fees for the four years, respectively, are $165, $160, $150 and $170. The Dean is Dr. Albert C. Eycleshymer. The total registration for 1919-1920 was 270; graduates, 85. The thirty-ninth session begins Sept. 28, 1920, and ends June 10, 1921.

* Figures from 1920 census returns.

LOYOLA UNIVERSITY SCHOOL OF MEDICINE, 706 S. Lincoln St., Chicago.—Organized in 1868 as the Bennett College of Eclectic Medicine and Surgery. Eclecticism dropped and title of Bennett Medical College assumed in 1909. First class graduated in 1870, and a class graduated each subsequent year. Absorbed the Illinois Medical College in 1910 and the Reliance Medical College in 1911. In 1910 it became by affiliation the School of Medicine of Loyola University; the university assumed full control in 1915. Took over by purchase the Chicago College of Medicine and Surgery in 1917. Two years of college work are required for admission. The faculty is composed of 53 professors, 62 assistants and instructors, a total of 115. The total fees for the four years are, respectively, $165, $165, $165 and $185. The Dean is Dr. Louis D. Moorhead. The total enrolment for 1919-1920 was 204; graduates, 23. The next session begins Oct. 1, 1920, and ends June 15, 1921.

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL OF CHICAGO, 2811 Cottage Grove Avenue.—Organized in 1859. The first class was graduated in 1861. Absorbed the Chicago Homeopathic Medical College in 1904. The faculty includes 65 professors and 27 lecturers, assistants, etc., a total of 92. Two years of collegiate work are required for admission. The course extends over four years of eight months each. The tuition fees for the four years, respectively, are $176, $161.50, $176.50 and $191.50. The Dean is Dr. Joseph P. Cobb. The total registration for 1919-1920 was 48; graduates, 10. The sixty-first session begins Sept. 28, 1920, and ends June 15, 1921.

CHICAGO MEDICAL SCHOOL, an afternoon and night school, located at 3832 Rhodes Avenue.—Organized in 1911 as the Chicago Hospital College of Medicine; chartered in 1912. In December, 1917, the classes of the Jenner Medical College were transferred to it. Total registration for 1919-1920 was 88; graduates, about 15. *Official reports indicate that the diplomas from this college are not recognized by the licensing boards of thirty-nine states.*

INDIANA

Indiana, population 2,854,167, has one medical college, the Indiana University School of Medicine, located at Indianapolis, a city of 314,194* people, except that the work of the first year is offered also at Bloomington, the seat of the University.

Candidates for license to practice medicine in Indiana who matriculated between Jan. 11, 1910, and Jan. 1, 1911, must have completed one year of collegiate work, in addition to an accredited four-year high school course, prior to beginning the study of medicine. Those matriculating subsequent to Jan. 1, 1911, must have completed two years of work in a recognized college of liberal arts.

Bloomington and Indianapolis

INDIANA UNIVERSITY SCHOOL OF MEDICINE.—Organized in 1903, but did not give all of the work of the first two years of the medical course until 1905. In 1907, by union with the State College of Physicians and Surgeons, the complete course in medicine was offered. In 1908 the Indiana Medical College, which was formed in 1905 by the merger of the Medical College of Indiana (organized in 1878), the Central College of Physicians and Surgeons (organized in 1879), and the Fort Wayne College of Medicine (organized in 1879), merged into it. The first class was graduated in 1908. The faculty consists of 64 professors and 87 lecturers, associates and assistants, a total of 151. Two years of collegiate work are required for admission. The work of the first year is emphasized only at Bloomington. The work of the other three years is all at Indianapolis. The fees for the four years, respectively, are $125, $125, $150 and $150. Matriculation fee, $5; microscope fee, $5 to $7.50 per semester. A fifth optional intern year leading to the "M.D. cum laude" has been added. The Assistant Dean at Bloomington is Dr. B. D. Myers; the Dean is Dr. Charles P. Emerson, Indianapolis. The total registration for 1919-1920 was 234; graduates, 48. The next session begins Sept. 14, 1920, and ends June 8, 1921.

IOWA

Iowa, population 2,224, 771, has one medical college, the College of Medicine of the State University of Iowa, located in Iowa City, population 11,267.*

Candidates for license to practice medicine in Iowa who graduated subsequent to Jan. 1, 1915, must have completed two years of work in an approved college of liberal arts prior to beginning the study of medicine, this preliminary college work to have included courses in physics, chemistry, biology and a foreign language.

Iowa City

STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE, University Campus.—Organized in 1869. First session began in 1870. First class graduated in 1871. Absorbed Drake University College of Medicine in 1913. The faculty is made up of 32 professors, 24 lecturers, demonstrators and assistants, a total of 56. Two years of collegiate work, including courses in physics, chemistry, biology and French or German, are required for admission. The course of study covers four years of thirty-six weeks each. The tuition fee for residents of Iowa is $85 per year and for nonresidents $100, plus a matriculation fee of $10 and a graduation fee of $10. The Dean is Dr. Lee Wallace Dean, Iowa City. Total registration for 1919-1920 was 230; graduates, 53. The fifty-first session begins Sept. 23, 1920, and ends June 14, 1921.

KANSAS

Kansas, population 1,874,195, has one medical college. The School of Medicine of the University of Kansas gives its first two years in Lawrence, population 12,456,* and the last two years in Rosedale, a suburb of Kansas City, which has a population of 397,284.

Candidates for license to practice medicine in Kansas who matriculated in the session of 1910-11 and thereafter must have completed at least one year of collegiate work including college courses in physics, chemistry and biology in addition to an accredited four-year high school course. This applies to graduates of 1914 and thereafter.

Lawrence and Rosedale

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE.—Organized in 1880. It offered only the first two years of the medical course until in 1905, when it merged with the Kansas City (Mo.) Medical College, founded in 1869, the College of Physicians and Surgeons, founded in 1894, and the Medico-Chirurgical College, founded in 1897. First class graduated in 1906. The clinical courses are given at Rosedale. Absorbed Kansas Medical College in 1913. The faculty, including lecturers and clinical assistants, numbers 73. The requirements for admission are two years of collegiate work. The course covers four years of nine months each. The total fees for each of the four years are, respectively, $111, $111, $103 and $103 for residents of the state. For nonresidents the fees of the first two years are $121 each year. The Dean is Dr. S. J. Crumbine; Associate Dean, Dr. M. D. Sudler. The total registration for 1919-1920 was 133; graduates, 23. The forty-first session begins Sept. 13, 1920, and ends June 8, 1921.

KENTUCKY

Kentucky, population 2,408,547, has one medical college, the University of Louisville Medical Department, situated in Louisville, a city of 234,891 * inhabitants.

To be eligible for license to practice medicine in Kentucky, all students matriculating in and after the session of 1914-15 and 1918-19, in addition to an accredited four-year high school course, must have completed, respectively, one year and two years of college work, including college courses in physics, chemistry, biology and a modern language prior to beginning the study of medicine.

Louisville

UNIVERSITY OF LOUISVILLE MEDICAL DEPARTMENT, First and Chestnut Streets.—Organized in 1837 as the Louisville Medical Institute. The first class graduated in 1838, and a class graduated in each subsequent year except in 1863. In 1846 the present name was assumed. In 1907 it absorbed the Kentucky University Medical Department. In 1908 it absorbed the Louisville Medical College, the Hospital College of Medicine and the Kentucky School of Medicine. Two years of collegiate work are required for admission. It has a faculty of 29 professors and 90 lecturers and assistants, a total of 119. The course covers four years of thirty-two weeks each. The fees for each of the four years are $200. The Dean is Dr. Henry Enos Tuley. The total registration for 1919-1920 was 136; graduates, 29. The next session begins Sept. 21, 1920, and ends June 2, 1921.

LOUISIANA

Louisiana, having a population of 1,884,778, contains one medical college, the School of Medicine of the Tulane University of Louisiana, situated in New Orleans, a city of 387,408.*

Candidates for license to practice medicine in Louisiana who graduate in 1919 and 1922 must present evidence that they have successfully completed, at an approved college or university, respectively, one year and two years of college work including biology, physics, chemistry and a modern language, before entering on the study of medicine. These requirements apply to all students who matriculated, respectively, in 1915 and 1918.

New Orleans

TULANE UNIVERSITY OF LOUISIANA SCHOOL OF MEDICINE, University Campus and 1551 Canal Street.—Organized in 1834 as the Medical College of Louisiana. Classes were graduated in 1835 and in all subsequent years except 1863-65, inclusive. It was transferred to the Medical Department of the University of Louisiana in 1847 and became the Medical Department of the Tulane University of Louisiana in 1884. Present name in 1913, when it became the School of Medicine of the College of Medicine of the Tulane University of Louisiana. The faculty has 33 professors and 98 assistant professors, instructors, demonstrators, etc., a total of 131. The course covers four years of thirty-two weeks each. Two years of collegiate work are required for admission. Total fees for each of the four years, respectively, are $220, $225, $215 and $245. The Dean is Dr. Isadore Dyer. The total registration for 1919-1920 was 325; graduates, 81. The eighty-sixth session begins Sept. 27, 1920, and ends June 8, 1921.

MAINE

Maine, population 742,191, has one medical college, the Bowdoin Medical School, located in Brunswick and Portland, the latter having a population of 69,196.*

To secure a license to practice in Maine, students matriculating in and after the session of 1915-16 must have completed one year of work in an approved college of arts and sciences before entering on the study of medicine. This applies to graduates of 1919 and thereafter.

Brunswick-Portland

BOWDOIN MEDICAL SCHOOL. The Medical Department of Bowdoin College. The first two years are given at Bowdoin College, Brunswick, the last two at Portland, building located on Chadwick Street.—Organized in 1820 as the Medical School of Maine. The first class graduated in 1821. Present title assumed in 1915. The faculty numbers 58. Two years of collegiate work, including courses in physics, chemistry and biology are required for admission. The course covers four years of eight months each. The total fees are $150 each year. The Dean is Dr. Addison S. Thayer, 10 Deering Street, Portland. The total number of students in 1919-1920 was 43; graduates, 10. The one hundredth session begins Oct. 7, 1920, and ends June 23, 1921.

MARYLAND

Maryland, with a population of 1,384,539, contains two medical colleges, located in Baltimore, a city with 733,826 * inhabitants. They are as follows: Johns Hopkins University Medical Department, and the University of Maryland School of Medicine and College of Physicians and Surgeons, the last two having been merged.

To be eligible to practice medicine in Maryland, all students matriculating in the session of 1914-15 and 1918-19, in addition to a four-year high school education, must have completed, respectively, one year and two years of college work including courses in physics, chemistry, biology and French or German, prior to beginning the study of medicine.

Baltimore

JOHNS HOPKINS UNIVERSITY MEDICAL DEPARTMENT, Washington and Monument Streets.—Organized in 1893. The first class graduated in 1897. The faculty consists of 52 professors and 133 clinical professors, etc., a total of 185. The requirements for admission demand that the applicant either has (*a*) completed the chemical-biologic course which leads to the A.B. degree in the university, or (*b*) graduated at an approved college or scientific school and has a knowledge of French and German, physics, chemistry and biology, such as may be obtained from a year's course. The course extends over four years of eight and one-half months each. The total fees are $267 each year. The Dean is Dr. J. Whitridge Williams. Total registration for 1919-1920 was 390; graduates, 93. The twenty-eighth session begins Sept. 28, 1920, and ends June 21, 1921.

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND THE COLLEGE OF PHYSICIANS AND SURGEONS, Lombard and Green Streets.—Organized in 1807 as the College of Medicine of Maryland. The first class graduated in 1810. In 1812 it became the University of Maryland School of Medicine. Baltimore Medical College was merged into it in 1913. In 1915 the College of Physicians and Surgeons was merged and the present name assumed. The combined faculty numbers 164. Two years of collegiate work are required for admission. The course covers four years of eight months each. The total fees are $215 each year. The Dean is Dr. J. M. H. Rowland. Total registration for 1919-1920 was 244; graduates, 59. The fourteenth session begins Oct. 1, 1920, and ends June 1, 1921.

MASSACHUSETTS

Massachusetts, population 3,832,790, has five medical colleges: Medical School of Harvard University, Boston University School of Medicine, Tufts College Medical School, College of Physicians and Surgeons and the Middlesex College of Medicine and Surgery. They are all situated in Boston, a city of 747,923,* except the last named, which is in Cambridge, a city of 109,456.*

Boston

MEDICAL SCHOOL OF HARVARD UNIVERSITY, 240 Longwood Avenue.—Organized in 1782. The first class graduated in 1788. It has a faculty of 68 professors and 154 instructors and assistants, a total of 222. Candidates for admission must present a college degree or two years of work leading to such a degree with standing in the upper third of the class. The college work must include a year of physics, biology, general chemistry, a half year of organic chemistry, and a reading knowledge of French or German. The total fees for each of the four years are $230, $225, $225 and $225. The Dean is Dr. David L. Edsall. The total registration for 1919-1920 was 413; graduates 96. The one hundred and thirty-ninth session begins Sept. 27, 1920, and ends June 23, 1921.

BOSTON UNIVERSITY SCHOOL OF MEDICINE, 80 East Concord Street.—Organized in 1873. In 1874 the New England Female Medical College,

founded in 1848, was merged into it. The first class graduated in 1874. Became nonsectarian in 1918. Two years of collegiate work are required for admission. The faculty includes 23 professors, 55 associates, etc., making a total of 78. The course covers four years of eight months each. Total fees for each of the four years, respectively, are $175, $162, $160 and $190. The Dean is Dr. John P. Sutherland. Total registration for 1919-1920 was 88; graduates, 13. The forty-eighth session begins Oct. 7, 1920, and ends June 15, 1921.

TUFTS COLLEGE MEDICAL SCHOOL, 416 Huntington Avenue.—Organized in 1893 as the Medical Department of Tufts College. The first class graduated in 1894. It has a faculty of 45 professors and 72 assistants, lecturers, etc., a total of 117. Two years of collegiate work is required for admission. The course covers four years of eight months each. The total fees for each of the four years are $211, $196, $186 and $191. The Dean is Dr. Charles F. Painter. Total registration for 1919-1920 was 338; graduates, 83. The twenty-fifth session begins Sept. 16, 1920, and ends June 15, 1921.

COLLEGE OF PHYSICIANS AND SURGEONS, 517 Shawmut Avenue.—Organized in 1880. The first class graduated in 1882. Total attendance of medical students during 1919-1920 was about 32. There were 9 graduates. *This college has been reported not recognized by the Massachusetts Medical Society and by the licensing boards of forty states.*

Cambridge

MIDDLESEX COLLEGE OF MEDICINE AND SURGERY, Cambridge.—Organized in 1914 under the charter of the Worcester Medical College, which became extinct in 1859. A class was graduated in 1915 and each subsequent year. Was closely related in its interests with an osteopathic college and granted a liberal advanced standing for work done in that and other osteopathic colleges. During 1919-1920 it had a total enrolment of 189; graduates, 14. *This college has been reported as not recognized by the licensing boards of thirty-nine states.*

MICHIGAN

Michigan, population 3,133,678, has three medical colleges. Two of these, the University of Michigan Department of Medicine and Surgery and the Homeopathic Medical College of the University of Michigan, are located at Ann Arbor, a city of 19,516 * people. The Detroit College of Medicine and Surgery is located at Detroit, a city of 993,739 * inhabitants.

To be eligible for license to practice medicine in Michigan, all students matriculating in and after the sessions of 1914-15 and 1918-19, in addition to an accredited four-year high school education, must have completed, respectively, one year and two years of work in an approved college of liberal arts, including college courses in physics, chemistry, biology and French or German, prior to beginning the study of medicine.

Ann Arbor

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL.—Organized in 1850 as the University of Michigan Department of Medicine and Surgery. The first class graduated in 1851. Present title assumed in 1915. It has a faculty composed of 18 professors and 69 associates, instructors, etc., a total of 87. The entrance requirements are two years of college work, including courses in chemistry, physics and biology, with laboratory work, and a reading knowledge of one modern language. The curriculum embraces four years of nine months each. The total fees for Michigan students are $140 each year and $165 for nonresidents. The Dean is Dr. Victor C. Vaughan. The total registration for 1919-1920 was 389; graduates, 75. The seventy-first session begins Oct. 5, 1920, and ends June 30, 1921.

UNIVERSITY OF MICHIGAN HOMEOPATHIC MEDICAL SCHOOL.—Organized in 1875. The first class graduated in 1877. The work of the first two years is taken under the same teachers and in the same classes with the Medical School of the University of Michigan, and the fees charged are the same. The faculty for the last two years composes 6 professors and 11 associates, instructors, etc. The entrance requirements are two years of collegiate work. The Dean is Dr. W. B. Hinsdale. The total registration for 1919-1920 was 42; graduates, 7. The next session begins Oct. 5, 1920, and ends June 30, 1921.

Detroit

DETROIT COLLEGE OF MEDICINE AND SURGERY, 250 St. Antoine Street.—Organized as the Detroit College of Medicine in 1885 by consolidation of Detroit Medical College, organized in 1868, and the Michigan College of Medicine, organized in 1880. Reorganized with present title in 1913. The first class graduated in 1886. In 1918 it became a municipal institution under the control of the Detroit Board of Education. Entrance requirements are two years of collegiate work. The faculty embraces 34 professors, 175 lecturers, etc., a total of 209. The course covers five years of eight months each (including the hospital intern year). The total fees each year are $150—if residents of Detroit the fees are $25. The Dean is Dr. W. H. MacCraken. The total registration for 1919-1920 was 140; graduates, 41. The thirty-sixth session begins Sept. 27, 1920, and ends June 18, 1921.

MINNESOTA

Minnesota, population 2,345,287, contains one medical school, the University of Minnesota Medical School, situated in Minneapolis, a city of 380,582 * inhabitants.

Candidates for license to practice medicine in Minnesota who graduated subsequent to June 1, 1912, in addition to an accredited four-year high school education, must have completed two years of work the equivalent of that done in the liberal arts department of the University of Minnesota, including courses in physics, chemistry and biology, prior to beginning the study of medicine.

Minneapolis

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL.—Organized in 1883 as the University of Minnesota College of Medicine and Surgery, reorganized in 1888 by absorption of St. Paul Medical College and Minnesota Hospital College. The first class graduated in 1889. In 1908 the Minneapolis College of Physicians and Surgeons, organized in 1883, was merged. In 1909 the Homeopathic College of Medicine and Surgery was merged. Present title in 1913. The faculty includes 87 professors and 53 instructors and assistants, a total of 140. The curriculum covers four years of nine months each, and a year's internship in an approved hospital. The school is operated on the four-quarter plan. The entrance requirements are two years of University work, which must include six semester credits of rhetoric, eight semester credits of physics; twelve credits of general chemistry, qualitative analysis and organic chemistry; eight credits of zoology, and a reading knowledge of French or German. Students are required to secure a degree of B.S. or A.B. before the M.D. is granted. Total fees are $186 for residents and $216 for nonresidents, each year of three quarters. The Dean is Dr. E. P. Lyon. The total registration for 1919-1920 was 368; graduates, 60. The Thirty-second session begins Sept. 29, 1920, and ends June 14, 1921. The summer quarter begins June 21.

MISSISSIPPI

Mississippi, population 2,001,466, has one medical college, the Department of Medicine of the University of Mississippi, which is located at Oxford, a city of 1,948 * inhabitants.

Candidates for license to practice medicine in Mississippi who matriculate in the sessions of 1915-16 and of 1919-20 and thereafter, in addition to a standard four-year high school education, must have completed, respectively, one year and two years of work in an approved college or university, including courses in physics, chemistry, biology and a modern language, before entering on the study of medicine.

Oxford

UNIVERSITY OF MISSISSIPPI SCHOOL OF MEDICINE.—Organized in 1903. Gives only the first two years of the medical course. In 1908 a clinical department was established at Vicksburg, but was discontinued in 1910 after graduating one class. The session extends over eight and a half months. Entrance requirements are two years of collegiate work. The total fees each year are $133. The faculty numbers 16. The Dean is Dr. W. S. Leathers. The total registration for 1919-1920 was 51. The eighteenth session begins Sept. 15, 1920, and ends May 31, 1921.

MISSOURI

Missouri, population 3,448,498, has six medical colleges. St. Louis, population 772,897,* contains three of these, viz., the School of Medicine of St. Louis University, Washington University Medical School, and the St. Louis College of Physicians and Surgeons. Kansas City, with a population of 297,847, has two colleges, the Kansas City College of Medicine and Surgery and the Kansas City University of Physicians and Surgeons. The School of Medicine of the University of Missouri is at Columbia, a town of 10,681 * people.

Columbia

UNIVERSITY OF MISSOURI SCHOOL OF MEDICINE.—Organized at St. Louis in 1845; was discontinued in 1855, but was reorganized at Columbia in 1872. Teaching of the clinical years was suspended in 1909. The faculty includes 9 professors and 18 assistant professors, lecturers, etc., a total of 27. The course covers two years of thirty-two weeks each. The entrance requirements are two years of college work including French or German, 8 hours; general zoology, 8 hours; physics, 8 hours; inorganic chemistry, 8 hours; organic chemistry, 5 hours, and general bacteriology, 3 hours. Total fees are $80 for the first and $56 for the second year. Nonresidents of the state pay $10 per term extra. The Dean is Dr. Guy L. Noyes. Total registration for 1919-1920 was 69. The next session begins Aug. 30, 1920, and ends April 27, 1921.

Kansas City

KANSAS CITY COLLEGE OF MEDICINE AND SURGERY, Twenty-Third and Holmes Streets.—Organized in 1915 as an offshoot of the Eclectic Medical University, a Class C medical school, now extinct. It claims to be an eclectic college, but is reported not recognized as such by the National Eclectic Medical Association. Total registration for 1919-1920 was about 128; graduates, 41. Since this school is an offshoot of a Class C medical college and is *reported not recognized by the Missouri State Board of Health and by the licensing boards of thirty-six other states*, no higher rating can be granted to it, pending an inspection, which it has refused.

* Figures from 1920 Census returns.

KANSAS CITY UNIVERSITY OF PHYSICIANS AND SURGEONS, 729 Troost Street.—Originally chartered in 1903 as the Central College of Osteopathy; charter amended in 1917, by which it obtained the right to grant degrees in medicine, and the name was changed to the Central College Medical Department. Present title in 1918. Very liberal advanced standing allowed for work done in osteopathic colleges, and it still has osteopathic classes. There were 72 medical students enrolled in 1919-1920, of whom 39 graduated. Rated in Class C by the Council on Medical Education. *Reported not recognized by the licensing boards of Missouri and of forty-one other states.*

St. Louis

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, Kingshighway and Euclid Avenue.—Organized in 1842 as the Medical Department of St. Louis University. In 1835 it was chartered as an independent institution under the name of St. Louis Medical College. The first class graduated in 1843. In 1891 it became the Medical Department of Washington University. In 1899 it absorbed the Missouri Medical College. The faculty comprises 33 professors and 96 lecturers, instructors, etc., a total of 129. Two full years of college work are required for admission, including courses in English, physics, chemistry and biology, and a reading knowledge of German. The course is four years of eight months each. The total fees for the four years are, respectively, $221, $216, $216 and $221. The Dean is Dr. Nathaniel Allison. The total registration for 1919-1920 was 163; graduates, 43. The next session begins Sept. 23, 1920, and ends June 9, 1921.

ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE, 1402 South Grand Avenue.—Organized in 1901 as the Marion-Sims-Beaumont Medical College by union of Marion Sims Medical College, organized in 1890, and Beaumont Hospital Medical College, organized in 1886. First class graduated in 1902. It became the Medical Department of St. Louis University in 1903. The faculty is composed of 46 professors, 86 lecturers and assistants, a total of 132. One year of college subjects preliminary to the four years of medical subjects is given in the medical school. Two years of collegiate work are required for admission. The curriculum covers four years of thirty-two weeks each. Summer semester optional. The total fees are $200 each year. The Dean is Dr. Hanau W. Loeb. The total registration for 1919-1920 was 251; graduates, 63. The next session begins Oct. 1, 1920, and ends May 31, 1921.

ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS, Jefferson and Gamble Streets.—Organized in 1869. Classes graduated in 1870 and each subsequent year until 1873, when it suspended. Reorganized in 1879. Classes graduated in 1880 and subsequent years until 1915, when it merged with the Medical Department of the National University of Arts and Sciences. Reestablished in 1916. The Dean is Dr. Waldo Briggs. Registration during 1919-1920 was 144; graduates, 42. The next session begins Oct. 1, 1920, and ends June 3, 1921. *This college is reported as not recognized by the licensing boards of Missouri and forty other states.*

NEBRASKA

Nebraska, population 1,296,877, has two medical colleges, The University of Nebraska College of Medicine and the John A. Creighton Medical College of Omaha, population 191,601.*

Omaha

JOHN A. CREIGHTON MEDICAL COLLEGE, Fourteenth and Davenport Streets.—It is the Medical Department of Creighton University. Organized in 1892. The first class graduated in 1893. It has a faculty of 40 professors and 16 associates, lecturers and assistants, a total of 56. Two years of collegiate work are required for admission. The course of study embraces four years of eight months each. Continuous session adopted for seniors only. The total fees each year for the four years, are, respectively, $175, $165, $165 and $170. The Dean is Dr. Hermann von Schulte. Total registration for 1919-1920 was 99; graduates, 23. The thirty-ninth session begins Sept. 20, 1920, and ends June 4, 1921.

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE, Forty-Second Street and Dewey Avenue.—Organized in 1881 as the Omaha Medical College. The first class graduated in 1882. It became the Medical Department of Omaha University in 1891. In 1902 it affiliated with the University of Nebraska, with the present title. The first two years were given at Lincoln and the last two in Omaha until 1913, when all four years were transferred to Omaha. The faculty is composed of 21 professors and 67 lecturers and instructors, total 88. Two years of collegiate work are required for admission, including courses in physics, chemistry, zoology and a modern language. The fees for each of the four years, respectively, are $140, $120, $110 and $110. The Dean is Dr. Irving S. Cutter. Total registration for 1919-1920 was 184; graduates, 42. The next session begins Sept. 17, 1920, and ends June 4, 1921.

NEW HAMPSHIRE

New Hampshire, population 446,352, has one medical college, located at Hanover, population 2,075.

To be eligible for license to practice medicine in New Hampshire, all students matriculating in and after the session of 1915-16, in addition to a four-year high school education, must have completed at least two years of work in an approved college of liberal arts, prior to beginning the study of medicine.

DARTMOUTH MEDICAL SCHOOL.—Organized as New Hampshire Medical Institute in 1797. The first class graduated in 1798. It is under the control of the trustees of Dartmouth College. Clinical teaching was discontinued in 1914. The faculty is made up of 10 professors and 2 instructors, a total of 12. Two years of collegiate work are required for admission. The course covers nine calendar months in each year, or eight months of actual teaching. Candidates for the A.B. or B.S. degree in Dartmouth College may substitute the work of the first year in medicine for that of the senior year in the academic department. The fees for each year are $200. Dean, Dr. John M. Gile; Secretary, Colin C. Stewart. The total registration for 1919-1920 was 21. The next session opens Sept. 23, 1920, and ends June 22, 1921.

NEW YORK

New York State, population 10,646,989, has nine medical colleges. Five of these, College of Physicians and Surgeons (Columbia University), Cornell University Medical College, the University and Bellevue Hospital Medical College, Long Island College Hospital, New York Homeopathic Medical College and Flower Hospital and Fordham University School of Medicine, are located in New York City, population 5,621,151.* Albany Medical College is located in Albany, a city of 113,344 * people. The University of Buffalo Medical Department is situated in Buffalo, population 505,875.* The College of Medicine, Syracuse University, is in Syracuse, a city of 171,647 * inhabitants.

To be eligible to receive a license to practice in New York, students matriculating in 1918-19 and thereafter must have completed two years of college work before entering on the study of medicine. This applies to graduates of 1922 and thereafter.

Albany

ALBANY MEDICAL COLLEGE, 58-64 Eagle Street.—Organized in 1838. The first class graduated in 1839. It became the Medical Department of Union University in 1873. In 1915 Union University assumed educational control. The faculty is composed of 25 professors and 42 instructors, assistants, etc., a total of 67. Two years of collegiate work, including college courses in physics, chemistry (including organic), biology, English, and a modern foreign language, are required for admission. The curriculum covers four years of eight months each. The charge for tuition is $200 a year and $5 for matriculation. There are no extra fees except for rental of microscopes, laboratory breakage, and certain expensive supplies. The Dean is Dr. Thomas Ordway. The total registration for 1919-1920 was 82; graduates, 21. The ninetieth session begins Sept. 20, 1920, and ends June 13, 1921.

Buffalo

UNIVERSITY OF BUFFALO MEDICAL DEPARTMENT, High Street, near Main.—Organized in 1846. The first class graduated in 1847. It absorbed the Medical Department of Niagara University in 1898. The faculty is composed of 38 professors and 74 lecturers, assistants, etc., a total of 112. Two years of collegiate work, including college courses in physics, chemistry, biology, English and French or German are required for admission. The course covers four years of eight months each. The total fees for each of the four years are $240, matriculation fee $5. The Dean is Dr. C. Sumner Jones. Total registration for 1919-1920 was 211; graduates, 57. The seventy-fifth session begins Sept. 20, 1920, and ends June 3, 1921.

New York

COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS, 437 West Fifty-Ninth Street.—Organized in 1807 by the regents of the University of the State of New York as their medical department. The first class graduated in 1811. In 1860 it became, by affiliation, the Medical Department of Columbia College. It was made a permanent part of Columbia College by legislative enactment in 1891. That institution became Columbia University in 1896. The faculty is composed of 95 professors and 184 instructors, demonstrators, etc., a total of 279. Two years of collegiate work, including courses in physics, chemistry, biology, English and either French or German are required for admission. The work covers four years of eight months each. The Dean is Dr. William Darrach. The total fees for the four years, respectively, are $250, $250, $332 and $352. Total registration for 1919-1920 was 398; graduates, 101. The one hundred and thirteenth session begins Sept. 22, 1920, and ends June 1, 1921.

CORNELL UNIVERSITY MEDICAL COLLEGE, First Avenue and Twenty-Eighth Street, New York City, and Ithaca.—Organized in 1898. The first class was graduated in 1899. The work of the first year may be taken either in Ithaca or New York. The faculty is composed of 51 professors and 101 assistants, lecturers, instructors, etc., a total of 152. All candidates for admission must be graduates of approved colleges or scientific schools or seniors of approved colleges which will permit them to substitute the first year of this medical school for the fourth year of their college course and will confer on them the Bachelor degree on the completion of the year's work. The candidate must also have such knowledge of physics, inorganic chemistry and biology as may be obtained in college by a year's course in these subjects when accompanied by laboratory work. The fees for each of the four years are, respectively, $240, $235, $235 and $250. The Dean is Dr. Walter L. Niles. Total registration for 1919-1920 was 260; graduates, 51. The twenty-third session begins Sept. 27, 1920, and ends June 9, 1921.

FORDHAM UNIVERSITY SCHOOL OF MEDICINE, Bathgate Avenue and Fordham Road.—Organized in 1905 as the School of Medicine of St.

John's College. Present title assumed in 1907. First class graduated in 1909. The faculty consists of 35 professors and 41 lecturers and assistants, a total of 76. The college was suspended by the trustees in 1919, but is continuing for two sessions to permit the students already enrolled to finish their medical training. Its last class will graduate in 1921. The total registration for 1919-1920 was 118; graduates, 54. The next session begins Sept. 24, 1920, and ends June 15, 1921.

LONG ISLAND COLLEGE HOSPITAL, 350 Henry Street, Brooklyn.—Organized in 1858. The first class graduated in 1860. It has a faculty of 44 professors and 90 assistants, instructors, etc., a total of 134. Two years of collegiate work, including college courses in physics, chemistry and biology, are required for admission. The course covers four years of eight months each. The fees are $350 annually. The Dean is Dr. Otto V. Huffman. Total registration for 1919-1920 was 340; graduates, 76. The sixty-third session begins Sept. 27, 1920, and ends May 31, 1921.

NEW YORK HOMEOPATHIC MEDICAL COLLEGE AND FLOWER HOSPITAL, Eastern Boulevard, between Sixty-Third and Sixty-Fourth Streets.—Organized in 1858. Incorporated in 1860 as the Homeopathic Medical College of the State of New York. The title New York Homeopathic Medical College was assumed in 1869. Present title assumed in 1908. The first class graduated in 1861. The course covers four years of eight months each. It has a faculty of 34 professors and 27 lecturers and assistants. The total fees for the four years, respectively, are $250, $245, $220 and $230. Total registration for 1919-1920 was 142; graduates, 42. The sixty-first session begins Sept. 6, 1920, and ends May 21, 1921.

UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE, 338 East Twenty-Sixth Street.—Organized in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. It is the Medical Department of New York University. First class graduated in 1899. The faculty is composed of 65 professors and 106 instructors, etc., in all 171. The course covers four years of eight months each. Entrance requirements are two years of collegiate work, in addition to a standard four-year high school course, including college courses in physics, chemistry and biology. The fees for each of the four years are, respectively, $270, $270, $270, and $295. The Dean is Dr. Samuel A. Brown. Total registration for 1919-1920 was 465; graduates, 103. The next session begins Sept. 15, 1920, and ends June 7, 1921.

Syracuse

SYRACUSE UNIVERSITY COLLEGE OF MEDICINE, 307-311 Orange Street.—Organized in 1872, when the Geneva Medical College, chartered in 1834, was removed to Syracuse, under the title "The College of Physicians and Surgeons of Syracuse University." Present title assumed in 1875, when a compulsory three-year graded course was established. The first class graduated in 1873 and a class graduated each subsequent year. In 1889 the amalgamation with the university was made complete. Course extended to four years in 1896. Two years of a recognized college course are required for admission. The course covers four years of thirty-five weeks each. The fees are $217 annually; graduation fee, $10. The faculty is composed of 35 professors and 66 associate and assistant professors, lecturers and instructors. The Dean is Dr. John L. Heffron. The total enrolment for 1919-1920 was 147; graduates, 36. The fiftieth session begins Sept. 14, 1920, and ends June 8, 1921.

NORTH CAROLINA

North Carolina, population 2,466,025, has two medical schools, each of which gives only the first two years of the medical course. The School of Medicine of the University of North Carolina is located at Chapel Hill, population 1,149. Wake Forest College School of Medicine is at Wake Forest, population 1,443.

To be eligible for a license to practice medicine in North Carolina, graduates of 1918 and 1922 must have completed, respectively, one year and two years of college work including courses in physics, chemistry and biology in addition to 14 units of high school work before beginning the study of medicine.

Chapel Hill

UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE.—Organized in 1890. Until 1902 this school gave only the work of the first two years, when the course was extended to four years by the establishment of a department at Raleigh. The first class graduated in 1903. A class was graduated each subsequent year, including 1910, when the clinical department at Raleigh was discontinued. Two years of collegiate work are required for admission. The faculty is composed of 13 professors and 11 lecturers, assistants, etc., a total of 24. The fees for each year are $150. The Dean is Dr. I. H. Manning. The total registration for 1919-1920 was 62. The thirty-fifth session begins Sept. 23, 1920, and ends June 10, 1921.

Wake Forest

WAKE FOREST COLLEGE SCHOOL OF MEDICINE.—This school was organized in 1902. The faculty, including the professors of chemistry, physics and biology, numbers 10. Only the first two years of the medical course are offered after the completion of freshman and sophomore college work, and on this combined course the B.S. degree is conferred. Each annual course extends over nine months. The fees for each year aggregate $120. The Secretary is E. B. Earnshaw. The total registration for 1919-1920 was 45. The nineteenth session begins Sept. 7, 1920, and ends May 27, 1921.

* Figures from 1920 Census returns.

NORTH DAKOTA

North Dakota, population 791,437, has one medical college, the School of Medicine of the University of North Dakota, which is situated at University, a suburb of Grand Forks, a city of 13,950* people. It gives only the first two years of the medical course.

Candidates for license to practice medicine in North Dakota who graduated in 1912 and thereafter, in addition to a four-year high school education, must have completed two years of work in an approved college of liberal arts including courses in Latin, physics, chemistry, botany and zoology, prior to beginning the study of medicine. Beginning in 1918, every applicant for a license must show evidence of having spent at least one year as an intern in a hospital.

University

UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE.—Organized in 1905. Offers only the first two years of the medical course. Two years' work in a college of liberal arts is required for admission. The fees are about $85 each year. The faculty consists of 6 professors and 9 instructors, a total of 15. The Dean is Dr. Harley E. French. The total registration for 1919-1920 was 31. The fifteenth session begins Sept. 20, 1920, and ends June 14, 1921.

OHIO

Ohio, population 5,273,814, has five medical colleges. Two of these, the Medical College of the University of Cincinnati and the Eclectic Medical College, are located in Cincinnati, a city of 401,247* inhabitants. Cleveland, population 796,836,* contains one medical school, Western Reserve University School of Medicine. Columbus, population 237,031,* contains the two departments of the Ohio State University, the College of Medicine and the College of Homeopathic Medicine.

Cincinnati

UNIVERSITY OF CINCINNATI COLLEGE OF MEDICINE, Eden Avenue, Cincinnati General Hospital.—Organized in 1909 by the union of the Medical College of Ohio (founded in 1819) with the Miami Medical College (founded in 1852). The Medical College of Ohio became the Medical Department of the University of Cincinnati in 1896. Under a similar agreement, March 2, 1909, the Miami Medical College also merged into the University, when the title of Ohio-Miami Medical College of the University of Cincinnati was taken. Present title assumed in 1915. Two years of college work are required for admission. The faculty consists of 55 professors, 121 associates, assistants, etc., a total of 176. The course covers four years of eight month each. The fees for each of the four years, respectively, are $260, $210, $160 and $180. The Acting Dean is Dr. John C. Oliver. The total registration for 1919-1920 was 221; graduates, 44. The next session beings Oct. 5, 1920, and ends June 18, 1921.

ECLECTIC MEDICAL COLLEGE, 630 West Sixth Street.—Organized in 1833 at Worthington as the Worthington Medical College. Removed to Cincinnati in 1843. In 1845 it was chartered as the Eclectic Medical Institute. In 1857 the American Medical College, organized in 1839, was merged into it, and in 1859 the Eclectic College of Medicine and Surgery, organized in 1856, was merged into it. In 1910 it assumed its present title. Classes were graduated in 1833 and in all subsequent years except 1839 to 1843, inclusive. It has a faculty of 29 professors and 10 lecturers and assistants, a total of 39. Two years of college work are required for admission. The course covers four years of eight months each. The total fees for the four years, respectively, are $160, $150, $150 and $150. The Secretary is Dr. John K. Scudder. Total registration for 1919-1920 was 93; graduates, 32. The next session begins Sept. 16, 1920, and ends May 16, 1921.

Cleveland

WESTERN RESERVE UNIVERSITY SCHOOL OF MEDICINE, 1353 East Ninth Street.—Organized in 1843 as the Cleveland Medical College. The first class graduated in 1844. It assumed the present title in 1881. In 1910 it absorbed the Cleveland College of Physicians and Surgeons. The faculty includes 18 professors and 108 lecturers, assistants, etc., a total of 126. The curriculum embraces four years of eight and one-half months each. Three years of college work are required for admission. The total fees for each of the four years are, respectively, $225, $210, $204 and $205. The Dean is Dr. C. A. Hamann. The total registration for 1919-1920 was 178; graduates, 48. The seventy-eighth session begins Sept. 30, 1920, and ends June 16, 1921.

Columbus

OHIO STATE UNIVERSITY COLLEGE OF MEDICINE, 710 North Park Street.—Organized in 1907 as the Starling-Ohio Medical College by the union of Starling Medical College (organized 1847) with the Ohio Medical University (organized 1890). In 1914 it became an integral part of the Ohio State University with its present title. The faculty consists of 30 professors and 61 lecturers, demonstrators, etc., a total of 91. Two years of collegiate work are required for admission. The course covers four years of eight months each. Tuition fees are $152 each year for residents of Ohio; for nonresidents, the fees are $202. The Dean is Dr. Eugene F. McCampbell. The total registration for 1919-1920 was 150; graduates, 23. The next session begins Sept. 14, 1920, and ends June 14, 1921.

OHIO STATE UNIVERSITY COLLEGE OF HOMEOPATHIC MEDICINE.—Organized in 1914, when the property of the Cleveland-Pulte Medical College of Cleveland was transferred to the Ohio State University. The faculty numbers 21. Two years of college work are required for admission. The students are taught largely in the same classes and by the same teachers as students of the College of Medicine during the first two years and the tuition fees are the same. The Dean is Dr. Claude A. Burrett. The total registration for 1919-1920 was 26; graduates, 1. The sixth session begins Sept. 14, 1920, and ends June 14, 1921.

OKLAHOMA

Oklahoma, population 2,377,629, has one medical college, the School of Medicine of the University of Oklahoma. The work of the first and second years is given in the academic laboratories at Normal, a city of about 4,000 inhabitants. The work of the third and fourth years is given in Oklahoma City, which has a population of 91,258 * and which is eighteen miles north of Norman.

To be eligible for license to practice medicine in Oklahoma, all students matriculating in 1914-15 and in 1917-18, in addition to a four-year high school education, must have completed, respectively, one year and two years of work in an approved college of liberal arts, including courses in physics, chemistry, biology and a modern language prior to beginning the study of medicine.

Norman and Oklahoma City

UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE.—Organized in 1900. Gave only the first two years of the medical course at Norman until 1910, when a clinical department was established at Oklahoma City. It has a faculty of 38 professors and 28 instructors, a total of 66. Two years of collegiate work are required for admission. The course is four years of nine months each. An optional course of six years is offered for the degree of B.S. and M.D. The total fees for the four years are, respectively, $70, $40, $40 and $45. The Dean is Dr. Leroy Long, 325 East Fourth Street, Oklahoma City. The total registration for 1919-1920 was 86; graduates, 15. The session begins Sept. 16, 1920, and ends June 7, 1921.

OREGON

Oregon, population 888,243, has one medical college, the University of Oregon Medical School, located in Portland, a city of 258,288 * population.

Portland

UNIVERSITY OF OREGON MEDICAL SCHOOL, Marquam Hill.—Organized in 1887. The first class graduated in 1888. A class graduated each subsequent year except 1898. Became an integral part of the University of Oregon in 1910. The Willamette University Medical Department was merged in 1913. It has a faculty of 16 professors and 88 lecturers, assistants, etc., a total of 104. Entrance requirements are two years of college work or its equivalent. The course is four years of eight months each. The total fees for the four years are, respectively, $165, $160, $160 and $160. The Dean is Dr. Richard B. Dillehunt. The total registration for 1919-1920 was 103; graduates, 14. The thirty-fourth session begins Oct. 1, 1920, and ends May 31, 1921.

PENNSYLVANIA

Pennsylvania, population 8,798,067, has six medical colleges. Of these, Philadelphia, having a population of 1,823,158,* contains five, as follows: University of Pennsylvania School of Medicine, Jefferson Medical College, Hahnemann Medical College and Hospital, Woman's Medical College of Pennsylvania and Temple University Department of Medicine. The other school, the School of Medicine of the University of Pittsburgh, is situated in Pittsburgh, a city of 588,193.*

To be eligible for license to practice medicine in Pennsylvania, students matriculating in the session of 1914-15 and thereafter, in addition to a four-year high school education, must have completed a year's work either in an approved college of liberal arts or a preliminary year in the medical college, including college courses in physics, chemistry and biology, before beginning the study of medicine. He must also have completed an internship of at least one year in an approved hospital.

Philadelphia

UNIVERSITY OF PENNSYLVANIA SCHOOL OF MEDICINE, Thirty-Sixth Street and Hamilton Walk.—Organized in 1765. Classes were graduated in 1768 and in all subsequent years except 1772-79, inclusive. The original title was the Department of Medicine, College of Philadelphia. The present title, School of Medicine of the University of Pennsylvania, was adopted in 1909. It granted the first medical diploma issued in America. In 1916 it took over the Medico-Chirurgical College of Philadelphia to develop it as a graduate school. The faculty consists of 56 professors, associate, adjunct and assistant professors, and 154 lecturers, associates, instructors, etc., a total of 210. The minimum requirements for admission are a standard four-year high school course or its equivalent, plus two years of work in an approved college of arts and science, including courses in French or German, and in physics, chemistry and general biology or zoology, with appropriate laboratory exercises. The first and second year classes are limited to 100 students; third and fourth to 125 each. The course embraces four years of study of thirty-four weeks each. The total fees for each of the four years are, respectively, $343, $320, $320 and $324. The Dean is Dr. William Pepper. Total registration for 1919-1920 was 454; graduates, 131. The one hundred and fifty-fifth session begins Sept. 24, 1920, and ends June 15, 1921.

JEFFERSON MEDICAL COLLEGE, Tenth and Walnut Streets.—Organized in 1825 with its present title as the Medical Department of Jefferson College, Cannonsburg, Pa. Classes have been graduated annually since 1826. In 1838 a separate university charter was granted without change of title, since which time it has continued under the direction of its own board of trustees. It has a faculty of 43 professors, associate and assistant professors, and 124 associates, lecturers, demonstrators and instructors, a total of 167. Entrance requirements are a completed standard four-year high school or college preparatory course, or the equivalent, and in addition two years of work leading to a degree in an approved college of arts and science amounting to at least 60 semester hours, including specified courses in physics, general and organic chemistry and biology, with laboratory work in each subject. The course of study covers graded work of four years of eight and a half months each. The fees are about $320 each year, with a matriculation fee of $5 paid on admission. The Dean is Dr. Ross V. Patterson. The total registration for 1919-1920 was 522; graduates, 165. The ninety-sixth session begins Sept. 22, 1920, and ends June 14, 1921.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA, Twenty-First and N. College Avenue.—Organized in 1850. Classes were graduated in 1852 and in all subsequent years except 1862. It has a faculty of 14 professors and 46 assistants, lecturers, etc., in all 60. Entrance requirements are a completed course in a standard secondary school, and in addition two years of collegiate work, including courses in physics, chemistry, biology and two foreign languages, one of which must be French or German. The curriculum covers four years of eight months each. Fees for each of the four years are, respectively, $198, $202, $184 and $179.50. The Dean is Dr. Martha Tracy. The total registration for 1919-1920 was 89; graduates, 12. The eighty-first session begins Sept. 29, 1920, and ends June 15, 1921.

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL OF PHILADELPHIA, 220-24 North Broad Street.—Organized in 1848 as the Homeopathic Medical College of Pennsylvania. In 1869 it united with the Hahnemann Medical College of Philadelphia, taking the latter title. Assumed present title in 1885. The first class graduated in 1849. Entrance requirements are a completed course in a standard secondary school and in addition two years devoted to a college course, including English and either French, German or Spanish, physics, chemistry and biology. It has a faculty of 33 professors and 62 lecturers, instructors, etc., in all 95. The work covers four years of eight and a half months each. Total fees for each of the four years, respectively, are $230, $232, $232 and $250. The Dean is Dr. William A. Pearson. The total registration for the college year 1919-1920 was 130; graduates, 37. The seventy-third session begins Sept. 27, 1920, and ends May 31, 1921.

THE TEMPLE UNIVERSITY DEPARTMENT OF MEDICINE, Eighteenth and Buttonwood Streets.—Organized in 1901. The first class graduated in 1904. The faculty numbers 102. Two years of college work are required for admission. The fees for each of the four years, respectively, are $175, $171, $168 and $170. The Dean is Dr. Frank C. Hammond. The total registration for 1919-1920 was 114; graduates, 23. The twentieth session begins Sept. 20, 1920, and ends June 1, 1921.

Pittsburgh

UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE, Bigelow Boulevard.—Organized in 1886, as the Western Pennsylvania Medical College and in 1908 became an integral part of the University of Pittsburgh, removing to the university campus in 1910. The first class graduated in 1887. The faculty is composed of 15 professors and 105 associates, assistants, etc., 120 in all. Entrance requirements are two years of recognized college work, to have included essentially courses in English, chemistry (inorganic and organic), physics, biology and a reading knowledge of French or German, Italian or Spanish. The course of study is four years of eight and a half months each. The tuition fee is $310 a year; matriculation fee, $5; diploma fee, $10. The Dean is Dr. Raleigh R. Huggins. The total registration for 1919-1920 was 147; graduates, 31. The thirty-fifth session begins Sept. 27, 1920, and ends June 15, 1921.

SOUTH CAROLINA

South Carolina, population 1,660,934, has one medical college, situated in Charleston, a city of 60,734 people.

Graduates of 1922 (matriculants of 1918-19) and thereafter, to be eligible for license to practice medicine in South Carolina must have completed, in addition to 14 units of high school work, two years in an approved college, including courses in English, physics, chemistry and biology.

Charleston

THE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA, 16 Lucas Street.—Organized in 1823 as the Medical College of South Carolina. The first class graduated in 1825. In 1832 a medical college bearing the present title was chartered and the two schools continued as separate institutions until they were merged in 1838. Classes were graduated in all years except 1862 to 1865, inclusive. In 1913, by legislative enactment, it became a state institution. It has a faculty of 37 professors and 28 lecturers, instructors, etc., a total of 65. The course covers four

years of eight months each. Two years of collegiate work including courses in physics, chemistry, biology and a modern foreign language are required for admission, in addition to a standard high school preparation. The total fees are $150 annually. The Dean is Dr. Robert Wilson, Jr. Total enrolment for 1919-1920 was 65; graduates, 14. The ninety-second session begins Sept. 24, 1920, and ends June 2, 1921.

SOUTH DAKOTA

South Dakota, population 735,434, has one medical college, the University of South Dakota College of Medicine, located at Vermilion, a town of 2,590 * people.

To be eligible for license to practice medicine in South Dakota, graduates of 1915 and thereafter must show that they matriculated in and graduated from medical colleges which required at least two years of collegiate work for admission, including courses in physics, chemistry, biology and a modern language. This affects all students who matriculated in the session of 1911-1912 and thereafter.

Vermilion

UNIVERSITY OF SOUTH DAKOTA COLLEGE OF MEDICINE.—Organized in 1907. Offers only the first two years of the medical course. Two years' work in a college of liberal arts are required for admission. The fees are $60 each year. The faculty numbers 8. The Dean is Christian P. Lommen, B.S. The total registration for 1919-1920 was 23. The fourteenth session begins Sept. 27, 1920, and ends June 25, 1921.

TENNESSEE

Tennessee, population 2,321,253, has four medical colleges. Of these, Vanderbilt University Medical Department and Meharry Medical College are situated in Nashville, a city with a population of 118,342.* The College of Medicine of the University of Tennessee and the University of West Tennessee College of Medicine and Surgery are located in Memphis, population 162,351.*

To be eligible for a license to practice medicine in Tennessee, students matriculating in the session of 1914-1915 and of 1918-1919 must have completed, respectively, one year of collegiate work, including courses in physics, chemistry, biology and a modern language, in addition to a four-year high school course before entering on the study of medicine.

Memphis

UNIVERSITY OF TENNESSEE COLLEGE OF MEDICINE, three buildings, 879 Madison Avenue.—Organized in 1876 at Nashville as Nashville Medical College. First class graduated 1877, and a class graduated each subsequent year. Became Medical Department of University of Tennessee 1879. In 1909 it united with the Medical Department of the University of Nashville to form the joint Medical Department of the Universities of Nashville and Tennessee. This union was dissolved in 1911. The trustees of the University of Nashville by formal action of that board named the University of Tennessee College of Medicine as its legal successor. In 1911 it moved to Memphis, where it united with the College of Physicians and Surgeons. The Memphis Hospital Medical College was merged in 1913. Lincoln Memorial University Medical Department was merged in 1914. The faculty includes 54 professors and 53 assistants, instructors, etc., a total of 107. Entrance requirements are a completed secondary education plus two years of collegiate work. Students taking the two-year premedical course in Knoxville may secure the B.S. and M.D. degrees. The total fees for the four years, respectively, are $107, $102, $102 and $127 for bona fide residents of the state, and $50 more each year for nonresidents. The Dean is Dr. McIver Woody. Total registration for 1919-1920 was 50; graduates, 15. The next session begins Sept. 25, 1920, and ends June 7, 1921.

UNIVERSITY OF WEST TENNESSEE MEDICAL DEPARTMENT, Colored. 1190 South Phillips Place.—Organized in 1900. The first class graduated in 1904, and a class graduated each subsequent year. Total registration for 1919-1920 was 10; graduates, 1. *Official reports indicate that the diplomas of this college are not recognized by the licensing boards of Tennessee and forty-one other states.*

Nashville

VANDERBILT UNIVERSITY SCHOOL OF MEDICINE.—This school was founded in 1874. The first class graduated in 1875. The faculty consists of 42 professors and 37 lecturers, a total of 79. One year of collegiate work is required for admission. The course covers four years of nearly eight and a half months each. The total fees for the four years, respectively, are $160, $160, $160 and $185. The Dean is Dr. G. Canby Robinson. The total registration for 1919-1920 was 122; graduates, 29. The forty-seventh session begins Sept. 27, 1920, and ends June 8, 1921.

MEHARRY MEDICAL COLLEGE, Colored. 1118 First Avenue, South.—This school was organized in 1876 as the Medical Department of Central Tennessee College, which became Walden University in 1900. First class graduated in 1877. Obtained new charter independent of Walden University in 1916. The faculty is made up of 13 professors and 17 instructors, demonstrators, etc., 30 in all. The work embraces four years of thirty weeks each. The total fees for each of the first three years are $87 and for the fourth years $97. The President is Dr. George W. Hubbard. Total registration for 1919-1920 was 185; graduates, 39. The forty-fifth session begins Oct. 5, 1920, and ends May 19, 1921.

* Figures from the 1920 Census returns.

TEXAS

Texas, population 4,601,279, has two medical colleges. The University of Texas Department of Medicine is located at Galveston, a city of 41,863 inhabitants. The Baylor University College of Medicine is located in Dallas, population 158,976.*

To be eligible for a license to practice medicine in Texas, students matriculating in the session of 1914-1915 and thereafter must have completed a year of collegiate work, including courses in physics, chemistry, biology and modern language, in addition to a standard four-year high school course, before entering on the study of medicine.

Dallas

BAYLOR UNIVERSITY COLLEGE OF MEDICINE, 720 College Avenue.—Organized in 1900 as the University of Dallas Medical Department. In 1903 it took its present name and became the Medical Department of Baylor University at Waco. It acquired the charter of Dallas Medical College in 1904. The first class graduated in 1901. The faculty numbers 54. Entrance requirement is one year of college work in addition to a four-year high school education. For the session of 1918-19 and thereafter two years of collegiate work will be required for admission. The course is four years of eight months each. The fees for each of the four years, respectively, are $165, $160, $160 and $150. The Dean is Dr. E. H. Cary. Total registration for 1919-1920 was 141; graduates, 33. The twenty-first session begins Sept. 27, 1920, and ends May 26, 1921.

Galveston

UNIVERSITY OF TEXAS DEPARTMENT OF MEDICINE, Avenue B, between Ninth and Tenth Streets.—Organized in 1891. The first class graduated in 1892. It has a faculty of 23 professors and 19 lecturers and instructors, a total of 42. The curriculum embraces four years of eight months each. The entrance requirement is two years of collegiate work in addition to a four year high school education. The total fees for the four years, respectively, are $78, $48, $30.50 and $20.50 for residents of the state; $150 each year additional for non-residents. The Dean is Dr. William S. Carter. Total registration for 1919-1920 was 219; graduates, 51. The thirtieth session begins Oct. 1, 1920, and ends May 31, 1921.

UTAH

Utah, population 453,648, has one medical college, the School of Medicine of the University of Utah, situated at Salt Lake City, which has 118,110 * people.

To be eligible to secure licenses to practice medicine in Utah, students matriculating in and after the session of 1912-1913, in addition to a four-year high school education, must have completed at least one year of collegiate work prior to beginning the study of medicine, this preliminary college work to have included college courses in physics, chemistry and biology.

Salt Lake City

UNIVERSITY OF UTAH SCHOOL OF MEDICINE.—Organized in 1906. Gives only first two years of medical course. Each course covers thirty-six weeks. Two years of collegiate work are required for admission. The medical faculty consists of 11 professors and 13 lecturers and assistants, a total of 24. The fees are $110 each year. The Dean is Dr. Perry G. Snow. Total registration for 1919-1920 was 36. The fourteenth session begins Sept. 28, 1920, and ends June 5, 1921.

VERMONT

Vermont, population 366,192, has one medical school, located at Burlington, a town of 22,779 * people.

Students matriculating in and after the sessions of 1912-1913 and 1918-1919 who desire to practice medicine in Vermont must have obtained a preliminary training, respectively, of one year and of two years of collegiate work, in addition to a standard four-year high school education, this additional years' work to include college courses in physics, chemistry and biology.

Burlington

UNIVERSITY OF VERMONT COLLEGE OF MEDICINE, Pearl Street, College Park.—Organized with complete course in 1822. Classes graduated in 1823 to 1836, inclusive, when the school was suspended. It was reorganized in 1853 and classes were graduated in 1854 and in all subsequent years. The faculty numbers 41. Two years of college work in addition to a four-year high school education are required for admission. The course of study covers four years of nine months each. Continuous session for seniors only. The total fees for each of the first three years are $145, and $170 for the fourth year. The Dean is Dr. H. C. Tinkham. The total registration for 1919-1920 was 103; graduates, 22. The next session begins Sept. 22, 1920, and ends June 20, 1921.

VIRGINIA

Virginia, population 2,234,030, has two medical colleges, one, the Department of Medicine of the University of Virginia, situated in Charlottesville, population 10,688,* and the Medical College of Virginia at Richmond, population 156,687. Only graduates of medical colleges registered by the Virginia State Board of Medical Examiners are eligible to obtain licenses to practice medicine in this state. Medical colleges to be so registered must require of all students admitted in the session of 1914-1915, completion of at least one year, and in the session of 1917-1918 and thereafter two years of collegiate work, including courses in physics, chemistry, biology and a modern language, preferably German, in addition to a four-year high school education.

Charlottesville

UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE.—Organized in 1827. Classes were graduated in 1828 and in all subsequent years except 1865. It has a faculty of 22 professors and 23 lecturers, instructors, assistants, etc., a total of 45. The requirements for admission are the completion of a four-year high school course, or its equivalent, and two years of college work devoted to English, mathematics, chemistry, physics and biology, and French or German. Continuous session adopted for seniors only. Total fees for the four years, respectively, are $205, $207.50, $165 and $150. The Dean is Dr. Theodore Hough. The total registration for 1919-1920 was 103; graduates, 28. The ninety-second session begins Sept. 16, 1920, and ends June 15, 1921.

Richmond

MEDICAL COLLEGE OF VIRGINIA, Marshall and College Streets.—Organized in 1838 as the Medical Department of Hampden Sydney College. Present title was taken in 1854. In 1913 the University College of Medicine was merged. In 1914 the North Carolina Medical College was merged. Classes were graduated in 1840 and in all subsequent years. It has a faculty of 40 professors and 72 lecturers, instructors, etc., a total of 112. The requirement for admission is a four-year high school education and in addition two years of collegiate work, including courses in physics, chemistry, biology and French or German. The course embraces four years of eight months each. Total fees for the four years, respectively, are $210, $210, $210 and $240. The Dean is Dr. E. C. L. Miller. The total registration for 1919-1920 was 137; graduates, 23. The ninety-second session begins Sept. 15, 1920, and ends May 31, 1921.

WEST VIRGINIA

West Virginia, population 1,439,165, has one medical college, the School of Medicine of West Virginia University, which offers the first two years of the medical course. It is located at Morgantown, a city of 12,117 * population.

Graduates of 1921 (matriculants of 1917-1918) and thereafter, in order to secure licenses to practice medicine in West Virginia, must have completed, in addition to a high school education, one year of collegiate work, including courses in physics, chemistry and biology, before entering on the study of medicine.

Morgantown

WEST VIRGINIA UNIVERSITY SCHOOL OF MEDICINE.—Organized in 1902, and gives only the first two years of the medical course. Two years of college work are required for admission and the Bachelor's degree will be granted to those who finish the two years in medicine. Session extends through nine months. The faculty numbers 16. Fees: For residents of the state, $30 each year; for non-residents, $60. Cadets pay laboratory fees only. The Dean is Dr. John N. Simpson. The total registration for 1919-1920 was 55. The next session begins Sept. 20, 1920, and ends June 15, 1921.

WISCONSIN

Wisconsin, population 2,553,983, has two medical colleges, the Medical School of the University of Wisconsin, which teaches the first two years of the medical course, and is located at Madison, a city of 38,378 * people, and the Marquette University School of Medicine, located at Milwaukee, a city of 457,147 * people.

To be eligible for licenses to practice medicine in Wisconsin, students matriculating in the session of 1915-1916 (graduates of 1919) and thereafter, prior to entering a medical school, must have completed, besides a four-year high school course, two years of collegiate work, including courses in physics, chemistry, biology and a modern language.

Madison

UNIVERSITY OF WISCONSIN MEDICAL SCHOOL.—Organized in 1907. Gives only the first two years of the medical course. The teaching of the third will be given in the fall of 1923, and of the fourth year in 1924. For matriculation at least two years in a college of arts and science or an equivalent training are required, including two years of Latin, a reading knowledge of French or German, and at least a year's work in physics, chemistry and biology. It has a faculty of 18 professors and 30 lecturers, instructors, etc., a total of 48. Tuition fees: for residents of the state, $75 each year; for non-residents, $199. The Dean is Dr. Charles R. Bardeen. The registration for 1919-1920 was 141. The thirteenth session begins Sept. 23, 1920, and ends June 17, 1921.

Milwaukee

MARQUETTE UNIVERSITY SCHOOL OF MEDICINE, Fourth Street and Reservoir Avenue.—Organized in December, 1912, by the merger of the Milwaukee Medical College and the Wisconsin College of Physicians and Surgeons. It has a faculty of 79. The entrance requirements are two years of college work, including courses in physics, chemistry, biology and a modern language. The curriculum is for four years of thirty-four weeks each. The total fees for each year are $250. The Dean is Dr. Louis F. Jermain. The registration for 1919-1920 was 103; graduates, 2. The ninth session begins Oct. 1, 1920, and ends June 14, 1921.

PHILIPPINE ISLANDS

The Philippine Archipelago, having a population of 9,009,802, has two medical colleges, the University of the Philippines College of Medicine and Surgery and the Medical Faculty of the University of St. Thomas. They are located in the city of Manila, which in 1910 had a population of 234,409.

Manila

UNIVERSITY OF THE PHILIPPINES COLLEGE OF MEDICINE AND SURGERY, Manila.—Organized in 1907 as the Philippine Medical School, under the support of the government of the Philippine Islands. Present title in 1910. The faculty includes 34 professors and 36 lecturers, assistants, etc., a total of 70. Two years of collegiate work leading to the degree of Bachelor of Arts are required for admission. The course extends over five years of nine months each with an additional sixth year of intern service. The Dean is Dr. Fernando Calderon. The total registration for 1919-1920 was 147; graduates, 28. The fourteenth session began July 1, 1920, and ends April 4, 1921.

CANADA

The Dominion of Canada has nine medical colleges, all but one of which require a five-year course, including in the first year courses in physics, chemistry and biology. This course is practically equal to that in the colleges of the United States which require one year of college work for admission, including the science courses named. None of the Canadian colleges has a minimum requirement of two years of collegiate work, or its equivalent, preliminary to or as a part of the medical course. The medical school at Edmonton, Alberta, gives only the first two years of the medical course, or three years, including the preliminary science year.

Alberta

UNIVERSITY OF ALBERTA, FACULTY OF MEDICINE, Edmonton.—Organized in 1913. Offers only the first four years of the six-year medical course, including the two preliminary science years. The faculty numbers 26. Fees for the first year are $64; for the second, third and fourth years, each $88. The registrar is Cecil E. Race, B.A. The registration for 1919-1920 was 135. The eighth session begins Sept. 27, 1920, and ends May 12, 1921.

Manitoba

UNIVERSITY OF MANITOBA FACULTY OF MEDICINE, Winnipeg.—Organized in 1883, first class graduated in 1886, and a class graduated each subsequent year. The faculty numbers 90. The total fees for the five years, respectively, are $175, $165, $170, $160 and $160. The entire course covers five years, the first year including premedical courses in physics, chemistry and biology. The Dean is Dr. S. Willis Prowse. Total registration for 1919-1920 was 219; graduates, 24. The next session begins Sept. 14, 1920, and ends April 15, 1921.

Nova Scotia

DALHOUSIE UNIVERSITY, FACULTY OF MEDICINE, Halifax, N. S.—Organized in 1867. Incorporated as the Halifax Medical College in 1875. Reorganized as an examining faculty, separate from the Halifax Medical College in 1855. In 1911, in accordance with an agreement between the Governors of Dalhousie University and the Corporation of the Halifax Medical College, the work of the latter institution was discontinued and a full teaching faculty was established by the University. By an arrangement between Dalhousie University and the Provincial Medical Board of Nova Scotia, the final professional examinations are conducted conjointly by the university and the board, and candidates may qualify at the same time for their academic degrees and the provincial license. First class graduated in 1872. It has a faculty of 40 professors, lecturers and demonstrators. Requires matriculation examination and a graded course of five years, including premedical courses in physics, chemistry and biology. The fees are $140 for each of the first two years and $150 for each of the other three. The total registration for 1919-1920 was 139; graduates, 11. The Dean is Dr. John Stewart. The next session begins Sept. 29, 1920, and ends May 26, 1921.

Ontario

UNIVERSITY OF TORONTO, FACULTY OF MEDICINE, Toronto.—Organized in 1843 as the Medical Faculty of King's College. Abolished in 1853. Reestablished in 1887. In 1902 it absorbed Victoria University, Medical Department, and in 1903 absorbed Trinity Medical College. The course

of study covers six years of eight months each, the first two being devoted largely to physics, chemistry, biology and cultural courses in history, science and English. It has a faculty of 54 professors and 217 lecturers, associates, etc., a total of 271. The fees are $160 each year; graduation fee, $20. The Dean is Dr. A. Primrose. The total registration for 1919-1920 was 1,082; graduates, 74. The next session begins Sept. 28, 1920, and ends May 31, 1921.

Queen's University Faculty of Medicine, Kingston.—Organized 1854, first class graduated in 1855, and a class graduated each subsequent year. The faculty was originally a department of the university, but a separation took place in 1866, when the school was conducted under the charter of the Royal College of Physicians and Surgeons at Kingston. In 1892 the school again became an integral part of Queen's University. The faculty includes 22 professors and 28 assistants, instructors, etc., a total of 50. The fees for the six years are, respectively, $140.50, $140.50, $143, $144, $144 and $134; fee for M.D., C.M. degrees, $30. The course covers six years of thirty teaching weeks each, the first year including courses in physics, chemistry, biology, English and French or German. The total registration in 1919-1920 was 239; graduates, 21. The Dean is Dr. J. C. Connell. The next session begins Sept. 29, 1920, and ends May 29, 1921.

Western University, Faculty of Medicine, London.—Organized in 1881, first class graduated in 1883, and a class graduated each year subsequently. The medical school has been under the control of the Board of Governors of the Western University since 1913. The faculty numbers 43. The course is six years, of eight months each, the first year including premedical courses in physics, chemistry and biology. The total fees for the six years, respectively, are $150, $145, $145, $153, $153 and $178. The Acting Dean is Dr. Paul S. McKibben. Total registration for 1919-1920 was 119; graduates 11. The next session begins Oct. 4, 1920, and ends May 26, 1921.

Montreal

McGill University, Faculty of Medicine.—Founded 1824 as Montreal Medical Institution; became the Medical Faculty of McGill University in 1829; first class graduated under the university auspices in 1833. No session between 1836-39 owing to political troubles. In 1905 it absorbed the Faculty of Medicine of the University of Bishop College. The course extends over six years of eight months each, including the two preliminary years. The faculty numbers 135. The total fees for each of the first five years are $167; sixth year $197. The total registration for 1919-1920 was 624; graduates, 52. The Registrar is Dr. John W. Scane. The next session begins Oct. 1, 1920, and ends June 6, 1921.

University of Montreal Medical Faculty, Montreal.—Organized in 1843, incorporated in 1845 as the Montreal School of Medicine and Surgery. In 1891, by act of parliament, the Medical Faculty of Laval University (organized in 1878) was absorbed. Present name assumed in 1920. A class was graduated in 1843 and in each subsequent year. The faculty numbers 80. The course extends over five years, including premedical courses in physics, chemistry and biology. The total fees for the five years, respectively, are $110, $118, $126, $126 and $138. The Dean is Dr. E. P. Lachapelle. The total registration for 1919-1920 was 267; graduates, 32. The next session begins Oct. 3, 1920, and ends June 30, 1921.

Quebec

Laval University Faculty of Medicine, Quebec.—The Quebec School of Medicine, organized in 1848, became in 1852 the Medical Department of Laval University; first class graduated in 1855, and a class graduated each subsequent year. The faculty numbers 35. The fees are $90 each year. The course extends over five years, the first year including courses in physics, chemistry and biology. The Dean is Dr. Edwin Turcot, Quebec. Total registration for 1919-1920 was 149; graduates, 25.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES

The requirements for admission to and graduation from colleges holding membership in this association are 15 units of high school work and two years (60 semester hours) of college work.

Curriculum: The entire course of four years shall consist of not less than 3,600 hours, and shall be grouped in divisions and subdivided into subjects, each division and each subject to be allotted approximately the number of hours and percentages of the whole shown in the following schedule:

DIVISION I.

Anatomy, 684 Hours (19%). Minimum % of 3,600 Hours.

1. Gross anatomy, including clinical or applied anatomy	19%
2. Microscopic anatomy	
3. Embryology	

DIVISION II.

Physiology and Chemistry, 468 Hours (13%).

1. Physiology	8%
2. Biochemistry	5%

DIVISION III.

Pathology and Bacteriology, 468 Hours (13%).

1. Pathology, including necropsies	8 %
2. Bacteriology, including serology and immunology	3½%
3. Preventive medicine and public health	1½%

DIVISION IV.

Pharmacology, 216 Hours (6%).

1. Materia medica and pharmacy	6%
2. Pharmacology	

DIVISION V.

Medicine and Medical Specialties, 900 Hours (25%).

1. General medicine, including laboratory diagnosis	15 %
2. Pediatrics	4 %
3. Nervous and mental diseases	3½%
4. Dermatology and syphilis	2 %
5. Medical jurisprudence	½%

DIVISION VI.

Surgery and Surgical Specialties, 648 Hours (18%).

1. Surgery	11 %
2. Orthopedic surgery	2 %
3. Urology	1 %
4. Ophthalmology	1½%
5. Otology, rhinology and laryngology	1½%
6. Roentgenology	1 %

DIVISION VII.

Obstetrics and Gynecology, 216 Hours (6%).

1. Obstetrics, including obstetric surgery	4 %
2. Gynecology	2 %

When teaching conditions demand it, a subject may be transferred from one division to another.

MEMBERS OF ASSOCIATION

University of Alabama School of Medicine.
Leland Stanford Junior University School of Medicine.
University of California Medical School, Berkeley.
University of Colorado School of Medicine.
Yale University School of Medicine.
Georgetown University Medical School.
George Washington University School of Medicine.
Howard University School of Medicine.
Army Medical School.
Navy Medical School.
Emory University Medical Department.
University of Georgia College of Medicine.
Northwestern University Medical School.
Rush Medical College.
University of Illinois College of Medicine.
Indiana University School of Medicine.
University of Iowa College of Medicine.
University of Kansas School of Medicine.
University of Louisville Medical Department.
Tulane University of Louisiana School of Medicine.
Johns Hopkins University Medical Department.
University of Maryland School of Medicine and College of Physicians and Surgeons.
Medical School of Harvard University.
Tufts College Medical School.
Detroit College of Medicine and Surgery.
University of Michigan Medical School.
University of Minnesota Medical School.
University of Mississippi Department of Medicine.
St. Louis University School of Medicine.
University of Missouri School of Medicine.
Washington University Medical School.
John A. Creighton Medical College.
University of Nebraska College of Medicine.
Columbia University College of Physicians and Surgeons.
Cornell University Medical College.
Fordham University School of Medicine.
Long Island College Hospital.
Syracuse University College of Medicine.
University and Bellevue Hospital Medical College.
University of Buffalo Department of Medicine.
University of North Carolina School of Medicine.
University of North Dakota School of Medicine.
University of Cincinnati College of Medicine.
Ohio State University College of Medicine.
Western Reserve University School of Medicine.
University of Oklahoma School of Medicine.
Hahnemann Medical College and Hospital.
Jefferson Medical College.
University of Pennsylvania School of Medicine.
University of Pittsburgh School of Medicine.
Woman's Medical College.
University of the Philippines College of Medicine and Surgery.
Medical College of the State of South Carolina.
University of South Dakota College of Medicine.
Meharry Medical College (Affiliated Member).
University of Tennessee College of Medicine.
Vanderbilt University Medical Department.
Baylor University School of Medicine.
University of Texas Medical Department.
University of Vermont College of Medicine.
Medical College of Virginia.
University of Virginia Department of Medicine.
Marquette University School of Medicine.
University of Wisconsin Medical School.

The secretary-treasurer of the Association is Dr. Fred C. Zapffe, 3431 Lexington Street, Chicago.

HOSPITALS FURNISHING ACCEPTABLE INTERNSHIPS

(Revised to August 1, 1920)

The following general hospitals in Section I are considered in position to furnish acceptable internships for medical graduates. The hospitals in Sections II and III offer opportunities for physicians who seek further training along certain specialties. The internships in these hospitals, therefore should be considered as supplementary and should be based on an internship taken in a general hospital.

There are other hospitals which are probably eligible for admission to this list but are omitted either because they have failed to supply information on which any decision regarding them might be based or because they have definitely stated that they do not use interns.

SECTION I. GENERAL HOSPITALS; TOTAL, 469; 2,960 INTERNSHIPS; BEDS, 103,997

Name of Hospital	Location	Number of Beds				Interns		Examined or to Apply	Length of Service	Out-Patient Service	Accident Cases	Necropsies	Med. Library	Salary per Mo.	Training School for Nurses
		Surgical	Medical	Other	Total	Number in Hospital	By Appt. or Exam.								
ALABAMA															
Hillman Hospital	Birmingham	100	60	40	200	8	Ex.	March	1 yr.	yes	yes	yes	no	no	yes
City Hospital	Mobile	60	60	40	135	3	Ap.	.....	1 yr.	yes	yes	yes	no	no	yes
J. A. Andrews Memorial Hosp. (colored)	Tuskegee Institute	yes	yes	yes	60	2	Ap.	April	1 yr.	yes	yes	yes	yes	$6	yes
ARIZONA															
Copper Queen Hospital	Bisbee	40	25	10	75	1	Ap.	May	1 yr.	yes	yes	yes	no	$50	no
St. Joseph's Hospital	Phoenix	yes	yes	yes	100	1	.....	.....	.....	.....	.....	.....	no	.....	yes
CALIFORNIA															
California Hospital	Los Angeles	100	25	50	175	1	Ap.	June	1 yr.	no	yes	no	yes	no	yes
Los Angeles County Hospital [1]	Los Angeles	350	800	130	1,280	30	Ex.	*	18 mos.	yes	no	yes	yes	no	yes
White Memorial Hospital	Los Angeles	yes	yes	yes	64	2	Ap.	May	1 yr.	yes	yes	yes	yes	$10	yes
Franklin Hospital	San Francisco	yes	yes	yes	200	3	Ap.	.....	1-2 yrs.	no	yes	yes	no	fees	yes
Hospital for Children	San Francisco	yes	yes	yes	250	7	Ap.	Indef.	1 yr.	yes	no	yes	no	no	yes
Lane Hospital	San Francisco	55	45	105	200	14	Ap.	May	1 yr.	yes	few	yes	yes	fees	yes
Mount Zion Hospital	San Francisco	yes	yes	yes	150	2	Ap.	May	1 yr.	yes	yes	yes	yes	$25	yes
San Francisco Hospital [1]	San Francisco	yes	yes	yes	600	25	Ap.	May	1 yr.	no	yes	yes	yes	$10	yes
Southern Pacific General Hospital [1]	San Francisco	125	125	.....	250	7	Ap.	May	1 yr.	yes	yes	yes	yes	$10	yes
St. Luke's Hospital	San Francisco	yes	yes	yes	150	6	Ap.	May	1 yr.	no	yes	yes	no	no	yes
United States Marine Hospital	San Francisco	yes	yes	yes	150	2	Ap.	May	1 yr.	yes	yes	yes	yes	no	no
University of California Hospital [1]	San Francisco	50	49	109	208	14	Ap.	May	1 yr.	yes	few	yes	yes	no	yes
COLORADO															
University Hospital	Boulder	20	30	15	75	1	Ap.	.....	Indef.	no	no	no	no	.....	yes
St. Francis Hospital	Colorado Springs	75	75	.....	150	2	Ap.	April	1 yr.	no	yes	yes	yes	no	no
Children's Hospital	Denver	50	50	.....	100	2	Ap.	April	1 yr.	yes	yes	no	no	$25	yes
Denver City and County Hospital [1]	Denver	100	100	200	400	10	Ap.	†	12 mos.	no	yes	yes	yes	$20	yes
Mercy Hospital	Denver	100	25	25	150	4	Ex.	.....	1 yr.	no	yes	no	small	$25	yes
St. Anthony's Hospital	Denver	yes	yes	yes	175	2	Ex.	April	1 yr.	no	no	yes	no	no	no
St. Joseph's Hospital	Denver	yes	yes	yes	250	3	Ap.	April	1 yr.	no	yes	yes	no	no	yes
St. Luke's Hospital	Denver	140	.....	.....	140	4	Ap.	.....	1 yr.	no	yes	yes	no	yes	yes
CONNECTICUT															
Bridgeport Hospital	Bridgeport	70	60	120	250	6	Ap.	April	1 yr.	no	yes	yes	no	$25	yes
St. Vincent's Hospital	Bridgeport	100	70	55	225	4	Ap.	April	12 mos.	no	yes	yes	no	no	yes
Hartford Hospital	Hartford	180	171	162	513	10	Ex.	†	20 mos.	no	yes	yes	no	yes	yes
St. Francis' Hospital	Hartford	yes	yes	yes	600	6	Ex.	April	2 mos.	no	yes	few	no	yes	yes
Grace Hospital [1]	New Haven	52	28	20	100	2	Ap.	April	1 yr.	no	yes	yes	yes	$300 (a)	yes
Hospital of St. Raphael	New Haven	60	60	30	150	2	Ex.	Indef.	16 mos.	no	yes	yes	no	no	yes
New Haven Hospital	New Haven	75	125	150	350	9	Ap.	June	1 yr.	no	yes	yes	yes	no	yes
Wm. W. Backus Hospital	Norwich	yes	yes	yes	90	1	Ap.	May	1 yr.	yes	yes	yes	no	$225 (a)	yes
St. Mary's Hospital	Waterbury	40	40	40	120	2	Ap.	May	1-2 yrs.	no	yes	few	no	$200 (a)	yes
Waterbury Hospital	Waterbury	55	42	83	180	2	Ap.	May	1 yr.	no	yes	yes	no	$25	yes
DELAWARE															
Delaware Hospital	Wilmington	60	40	85	185	4	Ex.	.....	1 yr.	yes	yes	yes	no	no	yes
Homeopathic Hospital	Wilmington	33	22	35	90	1	Ap.	Jan.	1 yr.	yes	yes	yes	yes	$150 (a,b)	yes
DISTRICT OF COLUMBIA															
Central Disp. and Emergency Hospital	Washington	yes	yes	.....	150	7	Ex.	Indef.	1 yr.	yes	yes	yes	no	no	yes
Columbia Hospital for Women	Washington	67	.....	67	134	4	Ex.	Indef.	1 yr.	yes	yes	yes	no	no	yes
Eastern Disp. and Casualty Hospital	Washington	60	10	5	75	4	Ex.	.....	1 yr.	yes	yes	no	no	no	yes
Freedmen's Hospital	Washington	148	75	55	278	11	Ex.	§	1 yr.	yes	yes	yes	no	no	yes
Garfield Memorial Hospital	Washington	yes	yes	yes	250	6	Ex.	April	1 yr.	yes	yes	no	no	$10	yes
Georgetown University Hospital	Washington	86	71	100	260	5	Ap.	April	1 yr.	yes	yes	yes	yes	no	yes
George Washington University Hospital	Washington	40	40	25	105	5	Ex.	July	1 yr.	yes	yes	yes	yes	$10	yes
Providence Hospital	Washington	129	122	49	300	6	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
Sibley Memorial Hospital	Washington	100	20	30	150	2	Ap.	May	1 yr.	yes	yes	yes	no	fees	yes
Washington Asylum Hospital	Washington	75	150	10	235	7	Ap.	April	1 yr.	no	yes	yes	no	fees	yes
FLORIDA															
St. Luke's Hospital	Jacksonville	yes	yes	yes	125	2	Ap.	April	16 mos.	no	yes	yes	no	no	yes
Pensacola Hospital	Pensacola	yes	yes	yes	70	1	Ap.	.....	.....	.....	.....	.....	.....	.....	.....
GEORGIA															
Davis-Fischer Sanatorium	Atlanta	yes	yes	yes	90	2	Ap.	.....	.....	yes	yes	no	yes	no	yes
Georgia Baptist Hospital	Atlanta	yes	yes	yes	120	2	Ex.	March	1 yr.	no	yes	no	no	$5	yes
Grady Memorial Hospital	Atlanta	100	50	50	200	15	Ex.	†	1 yr.	yes	yes	yes	no	$8¼	yes
Piedmont Sanatorium	Atlanta	yes	yes	yes	57	2	Ex.	March	1 yr.	no	few	no	yes	2d yr.	yes
St. Joseph Infirmary	Atlanta	yes	yes	yes	100	3	Ap.	March	2 yrs.	no	no	no	no	$10	yes
University Hospital	Augusta	yes	yes	yes	270	8	Ap.	June	1 yr.	yes	yes	yes	yes	no	.....
Macon Hospital	Macon	yes	yes	yes	150	3	Ap.	.....	2 yrs.	yes	yes	yes	yes	no	yes
ILLINOIS															
Alexian Brothers' Hosp. (male patients only)	Chicago	85	45	120	250	8	Ex.	#	16 mos.	no	yes	yes	no	no	yes
American Hosp. and Tr. School for Nurses	Chicago	60	40	20	120	3	Ex.	April	1 yr.	no	yes	yes	yes	no	yes
Augustana Hospital	Chicago	yes	yes	yes	300	9	Ap.	Indef.	2 yrs.	no	yes	yes	yes	no	yes
Chicago Policlinic and Hospital [1]	Chicago	25	15	10	50	6	Ex.	May	18 mos.	yes	yes	yes	no	no	yes
Columbus Hospital	Chicago	60	41	24	125	5	Ex.	April	1 yr.	no	yes	yes	no	yes	yes
Cook County Hospital	Chicago	600	600	1,500	2,700	85	Ex.	**	18 mos.	yes	yes	yes	no	no	yes
Englewood Hospital	Chicago	40	40	70	150	4	Ex.	.....	18 mos.	no	yes	yes	yes	no	no
Henrotin Memorial Hospital [1]	Chicago	yes	yes	yes	65	3	Ap.	July	6 mos.	no	yes	no	no	no	yes
Hospital of St. Anthony de Padua	Chicago	yes	yes	yes	177	4	Ap.	††	15 mos.	no	yes	yes	yes	no	yes
Illinois Central Hospital	Chicago	yes	yes	yes	110	4	Ex.	.....	.....	yes	yes	yes	yes	$20	no
Mary Thompson Hospital of Chicago for Women and Children	Chicago	85	15	25	75	3	Ex.	Indef.	1 yr.	yes	yes	yes	yes	no	yes
Mercy Hospital	Chicago	170	105	50	325	15	Ex.	**	1 yr.	no	yes	no	yes	no	yes

1. Women interns admitted.
4. No maternity work.
* May and November.
† Every two months.
‡ One every two months.
§ May and August.
¶ April and October.
# Every four months.
** May and November.
†† Every three months.
(a) Per year.
(b) Plus fees.

Name of Hospital	Location	Number of Beds				Interns									Training School for Nurses
		Surgical	Medical	Other	Total	Number in Hospital	By Appt. or Exam.	Examined or Apply in	Length of Service	Out-Patient Service	Accident Cases	Necropsies	Med. Library	Salary per Mo.	
Michael Reese Hospital	Chicago	77	36	362	475	23	Ex.	May	1 yr.	no	yes	yes	yes	no	yes
Norwegian American Hospital	Chicago	78	32	40	150	3	Ex.	Indef.	1 yr.	no	yes	yes	no	no	yes
Norwegian Lutheran Deaconess Hospital	Chicago	58	20	22	100	3	Ap.	Indef.	1 yr.	no	yes	yes	no	no	yes
Park Avenue Hospital	Chicago	25	20	25	70	1	Ap.	Nov.	18 mos.	no	yes	no	no	senior	yes
Post-Graduate Hospital [1]	Chicago	yes	yes	yes	80	2	Ap.	Indef.	1 yr.	yes	yes	yes	no	no	yes
Presbyterian Hospital [2]	Chicago	200	218	18	436	22	Ap.	††	1-2 yrs.	yes	yes	yes	yes	no	yes
Ravenswood Hospital	Chicago	25	15	10	50	2	Ap.	Indef.	1 yr.	no	yes	yes	yes	no	yes
St. Anne's Hospital	Chicago	53	25	22	100	3	Ap.	Indef.	4 mos.	yes	yes	yes	no	no	yes
St. Elizabeth's Hospital	Chicago	110	110	10	230	7	Ex.	Indef.	18 mos.	no	yes	yes	no	no	yes
St. Joseph's Hospital	Chicago	100	41	25	166	6	Ex.	Indef.	1 yr.	yes	few	yes	yes	no	yes
St. Luke's Hospital	Chicago	237	90	31	358	19	Ex.	May	2 yrs.	no	yes	yes	no	no	yes
St. Mary of Nazareth Hospital	Chicago	150	46	24	220	4	Ex.	Indef.	18 mos.	yes	yes	yes	yes	no	yes
University Hospital	Chicago	yes	yes	yes	100	4	Ex.	May	1 yr.	yes	no	yes	no	no	yes
Washington Boulevard Hospital	Chicago	yes	yes	yes	85	4	Ap.	Indef.	1 yr.	yes	yes	yes	no	no	yes
Washington Park Hospital	Chicago	yes	yes	yes	116	6	Ap.	Indef.	16 mos.	no	yes	yes	yes	no	yes
Wesley Memorial Hospital	Chicago	130	90	55	275	17	Ap.	Indef.	2 yrs.	yes	yes	yes	yes	no	yes
Evanston Hospital	Evanston	yes	yes	yes	125	4	Ap.	.....	18 mos.	yes	yes	yes	no	no	yes
Oak Park Hospital	Oak Park	50	30	20	100	3	Ap.	*	1 yr.	no	yes	yes	yes	$10	yes
West Suburban Hospital	Oak Park	yes	yes	30	125	4	Ap.	May	1 yr.	no	yes	yes	yes	no	yes
St. John's Hospital	Springfield	100	145	20	325	6	Ap.	†	1 yr.	yes	yes	yes	yes	no	yes
INDIANA															
St. Joseph's Hospital	Ft. Wayne	110	25	30	165	2	Ap.	.....	1 yr.	no	yes	yes	yes	yes	yes
Gary Hospital	Gary	yes	yes	yes	120	4	Ap.	.....	1 yr.	yes	yes	yes	yes	yes	no
Indianapolis City Hospital	Indianapolis	150	230	145	525	18	Ap.	‡	1 yr.	yes	yes	yes	yes	$12.50	yes
Methodist Episcopal Hospital	Indianapolis	132	40	98	270	6	Ap.	May	2 yrs.	no	yes	yes	no	yes	yes
Robert W. Long Hospital	Indianapolis	yes	yes	yes	100	4	Ap.	April	1 yr.	yes	yes	yes	yes	$12.50	yes
St. Vincent's Hospital	Indianapolis	150	30	20	150	4	Ap.	April	1 yr.	no	yes	yes	no	no	yes
St. Anthony's Hospital	Terre Haute	100	100	60	260	2	Ap.	Jan.	1 yr.	no	yes	no	.....	yes	no
IOWA															
Mercy Hospital	Davenport	yes	yes	yes	125	1	Ap.	May	1 yr.	no	yes	yes	yes	no	yes
Iowa Methodist Hospital	Des Moines	yes	yes	yes	225	4	Ap.	April	1 yr.	yes	yes	yes	no	$25	yes
Mercy Hospital	Des Moines	yes	yes	yes	250	4	Ap.	May	1 yr.	no	yes	no	no	no	yes
State University Hospital	Iowa City	132	80	178	390	12	Ap.	May	1 yr.	yes	yes	yes	no	$125 (a)	yes
St. Joseph's Mercy Hospital	Sioux City	yes	yes	yes	200	3	Ap.	March	1 yr.	yes	yes	yes	no	$25	yes
KANSAS															
St. Margarets Hospital	Kansas City	40	25	330	400	7	Ap.	April	1 yr.	no	yes	yes	yes	$10	no
Bell Memorial Hospital [3]	Rosedale	25	35	15	75	3	Ap.	April	1 yr.	yes	yes	yes	yes	$25 (b)	yes
Christ's Hospital	Topeka	50	16	34	100	1	Ap.	May	2 yrs.	no	few	few	no	$50	yes
St. Francis Hospital	Wichita	130	150	20	192	3	Ap.	June	1 yr.	yes	yes	yes	yes	$100	yes
Wichita Hosp. and Tr. School for Nurses	Wichita	yes	yes	yes	140	2	Ap.	Indef.	Indef.	no	yes	yes	no	yes	yes
KENTUCKY															
St. Elizabeth's Hospital	Covington	66	131	183	380	2	Ap.	May	1 yr.	no	yes	yes	no	$25	yes
Good Samaritan Hospital	Lexington	yes	yes	yes	129	1	Ap.	April	1 yr.	no	yes	no	no	no	yes
John N. Norton Memoral Infirmary	Louisville	50	36	14	102	1	Ap.	April	1 yr.	no	no	yes	no	$50	yes
Louisville City Hospital	Louisville	175	175	50	400	19	Ap.	May	1 yr.	yes	yes	yes	yes	§	yes
St. Anthony's Hospital	Louisville	80	50	.....	130	2	Ap.	May	1 yr.	yes	yes	yes	yes	no	no
St. Joseph's Infirmary	Louisville	100	.....	.....	100	1	Ap.	May	1 yr.	no	no	no	no	$25	no
LOUISIANA															
Charity Hospital of Louisiana	New Orleans	365	340	514	1,219	25	Ap.	March	1 yr.	yes	yes	yes	no	no	yes
Illinois Central Railroad Hospital	New Orleans	yes	yes	yes	100	2	Ap.	May	1 yr.	yes	yes	no	yes	$50	no
Touro Infirmary	New Orleans	yes	yes	yes	240	10	Ap.	April	1 yr.	yes	yes	yes	yes	$300 (a)	yes
Shreveport State Charity Hospital	Shreveport	150	150	15	315	6	Ap.	April	1 yr.	yes	yes	yes	yes	no	yes
T. E. Schumpert Memorial Sanitarium	Shreveport	yes	yes	.....	250	2	Ap.	April	1 yr.	yes	yes	few	no	no	yes
MAINE															
Eastern Maine General Hospital	Bangor	60	40	20	120	2	Ap.	Indef.	1 yr.	no	yes	no	yes	yes	yes
Central Maine General Hospital	Lewiston	yes	yes	yes	110	1	Ap.	May	1 yr.	no	yes	no	no	no	yes
Maine Eye and Ear Infirmary	Portland	yes	yes	yes	100	2	Ap.	May	1 yr.	yes	yes	yes	no	no	yes
Maine General Hospital	Portland	84	23	46	153	4	Ap.	June	1 yr.	no	yes	yes	yes	no	yes
MARYLAND															
Church Home and Infirmary	Baltimore	yes	yes	yes	175	6	Ap.	*	1 yr.	no	yes	yes	no	no	yes
City Hospital at Bay View	Baltimore	yes	yes	yes	1,800	8	Ex.	May	1 yr.	no	yes	yes	no	$100 (a)	no
Franklin Square Hospital	Baltimore	yes	yes	yes	100	4	Ap.	March	1 yr.	yes	yes	yes	no	fees	yes
Hebrew Hospital and Asylum	Baltimore	85	81	14	180	11	Ap.	May	1 yr.	yes	yes	yes	no	no	yes
Johns Hopkins Hospital	Baltimore	85	91	424	600	52	Ap.	June	1 yr.	yes	yes	yes	no	no	yes
Maryland General Hospital	Baltimore	40	40	120	200	12	Ap.	April	1 yr.	yes	yes	yes	no	no	yes
Mercy Hospital	Baltimore	yes	yes	yes	200	12	Ex.	April	1 yr.	yes	yes	yes	no	$50	yes
South Baltimore General Hospital	Baltimore	50	25	5	80	3	Ap.	April	1 yr.	yes	yes	yes	no	$150 (a)	yes
St. Agnes' Hospital	Baltimore	100	100	25	225	7	Ap.	April	Indef.	yes	yes	yes	no	no	yes
St. Joseph's Hospital	Baltimore	190	71	14	275	8	Ex.	April	1 yr.	yes	yes	yes	no	no	yes
Union Protestant Infirmary	Baltimore	yes	yes	yes	112	8	Ap.	Indef.	1 yr.	yes	no	yes	no	no	yes
United States Marine Hospital	Baltimore	60	50	5	125	1	Ex.	April	1 yr.	no	yes	yes	no	$25	yes
University of Maryland Hospital	Baltimore	150	72	53	275	14	Ap.	May	1 yr.	yes	yes	yes	yes	$25	yes
MASSACHUSETTS															
Boston City Hospital	Boston	326	283	609	1,220	59	Ex.	¶	1 yr.	yes	yes	yes	yes	no	yes
Boston Floating Hospital	Boston	yes	yes	yes	110	8	Ex.	April	2½ mos.	yes	yes	yes	yes	no	yes
Carney Hospital	Boston	70	81	69	220	13	Ex.	Indef.	16 mos.	yes	yes	yes	yes	no	yes
Massachusetts General Hospital	Boston	255	84	.....	339	34	Ap.	#	1 yr.	yes	yes	no	yes	no	yes
Massachusetts Homeopathic Hospital	Boston	279	197	84	560	10	Ex.	April	1 yr.	yes	yes	yes	yes	no	yes
New England Hosp. for Women and Child [2]	Boston	42	37	301	380	4	Ap.	June	1 yr.	yes	no	yes	no	no	yes
Peter Bent Brigham Hospital	Boston	yes	yes	.....	286	18	Ex.	.....	1 yr.	yes	yes	yes	no	no	yes
St. Elizabeth's Hospital	Boston	40	60	50	200	6	Ex.	June	1 yr.	yes	yes	yes	yes	no	yes
Brockton Hospital	Brockton	22	22	71	115	2	Ap.	May	1 yr.	yes	yes	yes	small	$25	yes
Cambridge Hospital	Cambridge	yes	yes	.....	50	3	Ap.	.....	1 yr.	yes	yes	yes	no	no	yes
Rufus I. Frost General Hospital	Chelsea	33	14	13	60	1	Ex.	May	1 yr.	yes	yes	no	small	$300 (a)	yes
Fall River City Hospital	Fall River	33	38	54	125	1	Ex.	Dec.	1 yr.	yes	yes	yes	no	$600 (a)	yes
Union Hospital	Fall River	83	40	17	140	3	Ap.	**	18 mos.	yes	yes	yes	yes	yes	yes
Burbank Hospital	Fitchburg	59	50	4	113	2	Ap.	April	1 yr.	yes	yes	yes	no	no	yes
Lawrence General Hospital	Lawrence	60	15	75	130	5	Ap.	**	1 yr.	yes	yes	yes	no	$10	yes
Lowell Corporation Hospital	Lowell	yes	yes	yes	100	1	Ap.	April	1 yr.	yes	yes	yes	small	$25	yes
Lowell General Hospital	Lowell	yes	yes	yes	150	1	Ap.	April	1 yr.	no	yes	yes	no	$300 (a)	yes
St. John's Hospital	Lowell	36	29	.....	65	2	Ap.	April	1 yr.	yes	yes	yes	no	no	yes
Lynn Hospital	Lynn	75	50	36	136	3	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
St. Luke's Hospital	New Bedford	yes	yes	yes	250	2	Ap.	June	1 yr.	no	few	no	small	no	yes
Newton Hospital	Newton	24	23	118	165	2	Ex.	May	1 yr.	yes	yes	yes	no	no	yes
House of Mercy Hospital	Pittsfield	yes	yes	yes	175	1	Ap.	April	1 yr.	yes	yes	no	no	$50	yes
Salem Hospital	Salem	44	34	22	100	2	Ap.	Indef.	1 yr.	yes	yes	yes	no	no	yes

1. Women interns admitted.
2. Women interns only.
3. Internships open only to graduates of local medical school.
* April and July.
† May and August.
‡ Two interns each month.
§ Juniors 10, seniors 15 a month, $100 on completion of year's service.
# Every two months.
¶ Surgical every 2 months, medical every 3 months.
** Every six months.
†† May and November.
(a) Per year. (b) Last four months.

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Name of Hospital	Location	Number of Beds				Interns		Examined or Apply in	Length of Service	Out-Patient Service	Accident Cases	Necropsies	Med. Library	Salary per Mo.	Training School for Nurses
		Surgical	Medical	Other	Total	Number in Hospital	By Appt. or Exam.								
Mercy Hospital	Springfield	93	37	45	175	3	Ex.	April	1 yr.	no	yes	yes	no	no	yes
Springfield Hospital	Springfield	yes	yes	yes	165	4	Ap.	†	1 yr.	no	yes	yes	yes	no	yes
Waltham Hospital	Waltham	yes	yes	yes	110	2	Ap.	May	1 yr.	yes	yes	no	no	no	yes
Memorial Hospital [2]	Worcester	44	44	87	175	6	Ap.	April	1 yr.	yes	yes	yes	yes	no	yes
St. Vincent's Hospital	Worcester	100	30	20	150	1	Ap.			yes	no	no	no	$30 (a)	yes
Worcester City Hospital	Worcester	152	147	51	350	10	Ap.	#	1 yr.	yes	yes	yes	yes	no	yes
MICHIGAN															
University Homeopathic Hospital [1]	Ann Arbor	yes	yes	yes	110	4	Ex.	June	1 yr.	yes	yes	yes	.....	$300 (a)	yes
University Hospital	Ann Arbor	248	209	47	504	11	Ex.	Dec.	1 yr.	yes	yes	yes	yes	no	yes
City of Detroit Receiving Hospital	Detroit	yes	yes	yes	135	5	Ap.	May	1 yr.	yes	yes	yes	no	$25	no
Grace Hospital	Detroit	yes	yes	yes	320	14	Ex.	Indef.	1 yr.	yes	yes	yes	yes	seniors	yes
Harper Hospital	Detroit	280	50	170	500	29	Ap.	Indef.	1 yr.	yes	yes	yes	yes	no	yes
Henry Ford Hospital [3]	Detroit	yes	yes	.....	75	4	Ap.	Indef.	Indef.	yes	yes	yes	no	yes	no
Providence Hospital	Detroit	yes	yes	yes	310	11	Ap.	May	1 yr.	no	yes	yes	small	$25	yes
St. Mary's Hospital	Detroit	150	159	21	360	12	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
Blodgett Memorial Hospital	Grand Rapids	yes	yes	yes	140	2		Indef.	Indef.	yes	yes	yes	no	no	yes
Hackley Hospital	Muskegon	30	28	22	80	1	Ap.	Indef.	Indef.	no	yes	yes	yes	$40	yes
Copper Range Hospital	Trimountain	yes	yes	.....	25	1	Ap.	May	1 yr.	yes	yes	yes	no	$25	yes
MINNESOTA															
Northern Pacific Railroad Hospital	Brainerd	yes	yes	.....	85	2	Ap.	May	1 yr.	yes	yes	few	yes	$25	yes
St. Mary's Hospital	Duluth	yes	yes	yes	200	4	Ap.	April	1 yr.	yes	yes	yes	yes	yes	yes
Abbott Hospital	Minneapolis	yes	yes	yes	50	1	Ap.	March	1 yr.	no	yes	yes	yes	no	yes
Minneapolis City Hospital	Minneapolis	132	140	628	900	22	Ap.	Indef.	1 yr.	yes	yes	yes	yes	no	yes
Northwestern Hospital [3]	Minneapolis	50	30	20	100	2	Ap.	April	1 yr.	no	yes	yes	no	no	yes
Swedish Hospital	Minneapolis	yes	yes	16	160	4	Ap.	April	1 yr.	yes	yes	yes	no	$25	yes
University Hospital	Minneapolis	53	51	96	200	13	Ap.	April	1 yr.	yes	no	yes	yes	no	yes
St. Mary's Hospital	Rochester	yes	yes	yes	300	12	Ap.	Indef.	1 yr.	no	yes	no	yes	no	yes
Bethesda Hospital	St. Paul	10	30	20	120	1	Ap.	April	1 yr.	no	yes	no	no	$25	yes
City and County Hospital	St. Paul	yes	yes	yes	850	20	Ap.	April	1 yr.	yes	yes	yes	yes	no	yes
Mounds Park Sanitarium	St. Paul	42	75	8	125	1	Ap.	Indef.	1 yr.	no	yes	few	small	$30	yes
St. Joseph's Hospital	St. Paul	80	50	20	150	4	Ap.	April	1 yr.	no	yes	yes	no	no	yes
St. Luke's Hospital	St. Paul	yes	yes	10	135	2	Ap.	April	1 yr.	no	yes	yes	no	$25	yes
MISSISSIPPI															
Mississippi State Charity Hospital	Jackson	100	.....	.....	100	3	Ap.	April	1 yr.	yes	yes	yes	small	no	yes
Natchez Hospital	Natchez	60	60	8	128	3	Ap.	April	1 yr.	yes	yes	yes	yes	no	yes
Mississippi State Charity Hospital	Vicksburg	yes	yes	yes	250	3	Ap.	Indef.	1 yr.	yes	yes	no	no	no	yes
MISSOURI															
Christian Church Hospital	Kansas City	yes	yes	yes	140	3	Ap.	April	1 yr.	no	yes	no	no	$50	yes
Kansas City General Hosp. (white and col.)	Kansas City	yes	yes	yes	500	16	Ap.	May	1 yr.	no	yes	yes	no	no	yes
Research Hospital	Kansas City	yes	yes	12	175	3	Ap.	April	1 yr.	no	yes	yes	yes	$50	yes
St. Joseph's Hospital	Kansas City	130	66	16	212	3	Ap.	*	18 mos.	yes	yes	yes	yes	no	yes
St. Luke's Hospital	Kansas City	yes	yes	yes	50	2	Ap.	April	1 yr.	.....	.....	.....	no	no	yes
St. Mary's Hospital	Kansas City	100	75	.....	175	2	Ap.	.....	1 yr.	no	yes	no	no	$50	yes
Swedish Hospital	Kansas City	yes	yes	yes	55	2	Ap.	Indef.	1 yr.	no	yes	no	yes	no	yes
University Hospital	Kansas City	yes	yes	yes	75	1	Ap.	Indef.	Indef.	yes	yes	yes	yes	$125	yes
Alexian Brothers' Hospital	St. Louis	80	120	.....	200	.....	Ap.	May	1 yr.	yes	yes	yes	no	no	yes
Barnes Hospital	St. Louis	68	70	112	250	15	Ex.	May	1 yr.	yes	yes	yes	yes	no	yes
Jewish Hospital	St. Louis	40	40	20	100	2	Ex.	April	1-2 yrs.	yes	yes	yes	no	§	yes
Missouri Baptist Sanitarium	St. Louis	120	75	205	400	4	Ap.	April	1 yr.	no	yes	yes	no	yes	yes
St. John's Hospital	St. Louis	135	59	.....	194	4	Ap.	March	22 mos.	no	yes	yes	yes	$20	yes
St. Louis City Hospital	St. Louis	500	420	350	1,270	48	Ex.	May	1 yr.	no	yes	yes	yes	$25	yes
St. Mary's Infirmary	St. Louis	125	50	.....	175	3	Ap.	‡	1 yr.	no	yes	yes	no	$25	yes
MONTANA															
St. Ann's Hospital	Anaconda	yes	yes	yes	100	1	Ap.			no	yes	no	no	.....	no
Murray Hospital [1]	Butte	64	32	4	100	2	Ap.	May	1 yr.	yes	yes	yes	yes	$50	yes
St. James Hospital	Butte	75	50	25	150	2	Ap.	May	1 yr.	yes	yes	yes	no	$30	yes
Northern Pacific Benefit Assn. Hospital	Glendive	yes	yes	yes	60	1	Ap.	May	1 yr.	yes	yes	yes	no	$25	no
Northern Pacific Benefit Assn. Hospital	Missoula	yes	yes	yes	75	2	Ap.	May	1 yr.	yes	yes	yes	no	$25	no
NEBRASKA															
St. Elizabeth's Hospital	Lincoln	yes	yes	yes	125	2	Ap.	Indef.	1 yr.	no	yes	no	yes	$25	yes
Bishop Clarkson Memorial Hospital	Omaha	34	34	12	80	2	Ap.	Nov.	1 yr.	no	yes	yes	yes	$50	yes
Creighton Memorial St. Joseph's Hospital	Omaha	222	124	54	400	6	Ex.	April	1 yr.	yes	yes	yes	yes	$100 (a)	yes
Nebraska Methodist Hospital [1]	Omaha	yes	yes	yes	210	4	Ap.	Indef.	Indef.	no	.....	yes	no	no	yes
University Hospital	Omaha	50	50	20	120	7	Ap.	April	1 yr.	yes	yes	yes	yes	§	yes
NEW HAMPSHIRE															
Mary Hitchcock Memorial Hospital	Hanover	50	10	10	70	2	Ap.	Indef.	1 yr.	yes	few	few	no	no	yes
NEW JERSEY															
Atlantic City Hospital	Atlantic City	yes	yes	yes	120	3	Ap.	May	1 yr.	yes	yes	yes	no	yes	yes
Bayonne Hospital and Dispensary	Bayonne	39	37	33	109	3	Ap.	June	1 yr.	yes	yes	yes	no	$25	yes
Cooper Hospital	Camden	50	50	50	150	5	Ap.	April	1 yr.	yes	yes	yes	yes	$10	yes
West Jersey Homeopathic Hospital	Camden	65	60	50	175	2	Ap.	April	1 yr.	yes	yes	yes	yes	$50	yes
Alexian Brothers' Hospital	Elizabeth	55	60	.....	115	3	Ap.	Nov.	1 yr.	yes	yes	yes	no	$50	no
Elizabeth General Hospital	Elizabeth	41	38	86	165	4	Ap.	April	1 yr.	yes	yes	yes	small	$100	yes
St. Elizabeth's Hospital	Elizabeth	85	90	29	160	6	Ex.	March	2 yrs.	yes	yes	yes	yes	$150 (a)	yes
Englewood Hospital Association	Englewood	yes	yes	yes	115	2	Ex.	Dec.	1 yr.	yes	yes	yes	no	$140	yes
Hackensack Hospital	Hackensack	yes	yes	yes	120	3	Ex.	June	1 yr.	yes	yes	yes	no	no	yes
St. Mary's Hospital	Hoboken	yes	yes	yes	500	3	Ap.	June	15 mos.	yes	yes	no	no	no	no
Christ Hospital	Jersey City	yes	yes	yes	125	3	Ap.	Indef.	16 mos.	yes	yes	yes	no	yes	yes
Jersey City Hospital	Jersey City	yes	yes	.....	600	8	Ap.	Nov.	2 yrs.	yes	yes	yes	no	$300¶	yes
St. Francis' Hospital	Jersey City	116	107	.....	223	5	Ap.	April	1 yr.	yes	yes	yes	yes	no	no
Monmouth Memorial Hospital	Long Branch	67	49	59	175	2	Ap.	April	1 yr.	yes	yes	yes	no	$10	yes
Mountainside Hospital	Montclair	68	74	28	170	4	Ex.	May	1 yr.	yes	yes	yes	small	yes	yes
Hospital of St. Barnabas	Newark	yes	yes	yes	103	3	Ex.	April	1 yr.	yes	yes	yes	no	$12	yes
Newark Beth Israel Hospital	Newark	30	30	40	100	4	Ex.	Indef.	1 yr.	yes	yes	yes	no	$150 (a)	yes
Newark City Hospital	Newark	yes	yes	yes	500	15	Ex.	Jan.	2 yrs.	no	yes	yes	no	no	yes
Newark Memorial Hospital	Newark	68	20	37	125	2	Ap.	May	1 yr.	yes	yes	yes	no	$25	yes
St. James' Hospital	Newark	yes	yes	yes	81	1	Ex.	May	1 yr.	yes	yes	yes	no	$200 (a)	yes
St. Michael's Hospital	Newark	107	235	.....	342	5	Ex.	Feb.	1 yr.	yes	yes	yes	no	no	no
Orange Memorial Hospital	Orange	53	53	44	150	3	Ap.	April	1 yr.	yes	yes	yes	no	$25	yes
St. Mary's Hospital	Orange	60	60	40	150	3	Ex.	April	1 yr.	yes	yes	.....	yes	no	yes
Passaic General Hospital	Passaic	41	37	36	104	2	Ex.	Nov.	1 yr.	yes	yes	yes	no	$100	yes
St. Mary's Hospital	Passaic	yes	yes	yes	60	2	Ex.	Indef.	Indef.	yes	yes	yes	yes	no	yes
Nathan and Miriam Barnert Hospital	Paterson	56	19	10	85	3	Ex.	Indef.	18 mos.	yes	yes	yes	no	$25	yes
Paterson General Hospital	Paterson	46	30	90	166	4	Ap.	May	1 yr.	yes	yes	yes	yes	$25	yes
St. Joseph's Hospital	Paterson	yes	yes	yes	150	4	Ex.	May	1 yr.	yes	yes	yes	yes	no	yes
Muhlenberg Hospital	Plainfield	yes	yes	yes	110	2	Ap.	May	1 yr.	yes	yes	yes	no	$300 (a)	yes
Mercer Hospital	Trenton	71	43	61	175	2	Ap.	May	1 yr.	yes	yes	yes	yes	$400 (a)	yes
St. Francis' Hospital	Trenton	yes	yes	yes	150	4	Ap.	June	1 yr.	yes	yes	yes	no	no	yes

1. Women interns admitted.
2. Conducted during period of the war as U. S. General Hospital No. 36.

* April and December.
† $15 for juniors, $30 for seniors.
‡ May and July.
†† First of Jan., April, July and Oct.

Every two months.
§ One intern receives salary.
¶ On completion of internship.
(a) Per year.

Name of Hospital	Location	Number of Beds				Interns									
		Surgical	Medical	Other	Total	Number in Hospital	By Appt. or Exam.	Examined or Apply in	Length of Service	Out-Patient Service	Accident Cases	Necropsies	Med. Library	Salary per Mo.	Training School for Nurses
William McKinley Memorial Hospital	Trenton	yes	yes	yes	75	2	Ap.	May	1 yr.	yes	yes	yes	no	$300 (a)	yes
North Hudson Hospital	Weehawken	yes	yes	yes	85	2	Ex.	.....	1 yr.	yes	yes	yes	yes	$30	yes
NEW YORK															
Albany Hospital	Albany	yes	yes	yes	400	8	Ap.	May	1 yr.	yes	yes	yes	no	no	yes
St. Peter's Hospital	Albany	yes	yes	yes	110	4	Ex.	May	1 yr.	yes	yes	yes	no	$400 (a)	yes
Auburn City Hospital [1]	Auburn	20	22	58	100	1	Ap.	May	1 yr.	no	yes	yes	yes	no	yes
Binghamton City Hospital [1]	Binghamton	29	28	85	142	2	Ex.	June	1 yr.	no	yes	yes	yes	no	yes
Brooklyn Hospital	Brooklyn	142	66	78	286	12	Ap.	Indef.	1 yr.	yes	yes	yes	yes	no	no
Greenpoint Hospital	Brooklyn	75	75	60	210	10	Ap.	*	18 mos.	yes	yes	yes	no	no	no
The Jewish Hospital	Brooklyn	100	80	95	285	13	Ex.	Indef.	2 yrs.	yes	yes	yes	yes	no	yes
Kings County Hospital	Brooklyn	278	851	80	1,209	27	Ex.	Indef.	2 yrs.	yes	yes	yes	no	no	yes
Long Island College Hospital	Brooklyn	300	180	192	674	13	Ap.	April	2 yrs.	yes	yes	yes	no	$150 (a)	yes
Methodist Episcopal Hospital	Brooklyn	yes	yes	50	330	9	Ex.	May	2 yrs.	few	yes	yes	no	no	yes
Norwegian Lutheran Deaconess Home and Hospital	Brooklyn	40	40	95	175	5	Ex.	Indef.	18 mos.	yes	yes	yes	small	no	yes
St. Catherine's Hospital	Brooklyn	150	70	35	255	10	†	†	20 mos.	no	yes	yes	.....	no	†
St. John's Hospital	Brooklyn	yes	yes	yes	100	4	Ap.	Indef.	16 mos.	no	no	yes	no	yes	yes
St. Mary's Hospital [1]	Brooklyn	152	132	16	300	6	Ap.	†	1 yr.	no	yes	yes	no	no	yes
St. Peter's Hospital	Brooklyn	yes	yes	.....	274	4	Ap.	†	1 yr.	no	yes	yes	yes	no	no
Swedish Hospital	Brooklyn	yes	yes	yes	75	4	Ap.	Indef.	1 yr.	no	yes	yes	no	$30	yes
Wyckoff Heights Hospital	Brooklyn	145	20	10	175	8	Ex.	Indef.	1 yr.	yes	yes	yes	yes	no	yes
Buffalo City Hospital	Buffalo	yes	yes	yes	280	20	Ex.	Indef.	1 yr.	yes	yes	yes	small	$25	yes
Buffalo Columbus Hospital	Buffalo	27	26	.....	53	2	Ap.	April	1 yr.	no	yes	yes	yes	no	yes
Buffalo General Hospital	Buffalo	90	90	195	375	12	Ex.	April	1 yr.	no	yes	yes	no	no	yes
Buffalo Homeopathic Hospital [1]	Buffalo	60	144	56	260	3	Ap.	May	1 yr.	no	no	yes	no	$40	yes
Buffalo Hospital of the Sisters of Charity	Buffalo	115	92	.....	207	3	Ap.	Indef.	1 yr.	no	yes	yes	no	yes	yes
Emergency Hosp. of the Sisters of Charity	Buffalo	44	41	.....	85	4	Ap.	Indef.	1 yr.	yes	yes	yes	no	yes	yes
Erie County Hospital [2]	Buffalo	65	300	125	390	8	Ex.	April	1 yr.	no	yes	yes	no	$300 (a)	yes
Wesbster County Hospital	East View	50	183	.....	183	1	Ap.	†	18 mos.	yes	yes	yes	no	no	yes
Arnot-Ogden Memorial Hospital	Elmira	yes	yes	yes	110	2	Ap.	May	1 yr.	no	no	no	no	no	yes
Flushing Hospital and Dispensary	Flushing	45	35	70	150	4	Ap.	†	18 mos.	yes	yes	yes	no	$50	yes
Glens Falls Hospital	Glens Falls	yes	yes	yes	80	1	Ap.	May	1 yr.	no	yes	yes	no	$100 (a)	yes
St. John's Hospital	Long Island City	100	100	19	225	5	Ap.	Indef.	18 mos.	yes	yes	yes	no	no	yes
Nassau Hospital	Mineola	yes	yes	yes	70	2	Ap.	Indef.	1 yr.	no	yes	yes	no	yes	yes
Mount Vernon Hospital [1]	Mount Vernon	yes	yes	yes	103	2	Ex.	May	2 yrs.	yes	yes	yes	yes	fees	yes
New Rochelle Hospital	New Rochelle	yes	yes	yes	82	2	Ap.	May	1 yr.	no	yes	yes	no	fees	yes
Bellevue Hospital [1]	New York	487	449	720	1,656	80	Ex.	†	1½-2 yrs.	yes	yes	yes	yes	$50	yes
Beth Israel Hospital	New York	48	72	22	142	9	Ex.	†	1-2 yrs.	yes	yes	yes	no	no	yes
Correctional Hospital	New York	yes	yes	yes	140	4	Ap.	Indef.	1 yr.	no	yes	yes	no	$600 (a)	no
Fordham Hospital	New York	115	83	78	276	13	Ex.	Dec.	2 yrs.	yes	yes	yes	yes	no	no
French Hospital	New York	yes	yes	yes	130	5	Ex.	†	18 mos.	yes	yes	yes	yes	no	yes
Gouverneur Hospital	New York	80	80	25	185	12	Ex.	Feb.	1-2 yrs.	yes	yes	yes	yes	no	no
Hahnemann Hospital	New York	yes	yes	yes	138	4	Ap.	Indef.	1 yr.	no	yes	yes	small	$10	yes
Harlem Hospital	New York	yes	yes	yes	200	18	Ex.	Indef.	2 yrs.	yes	yes	yes	yes	no	no
Italian Hospital	New York	yes	yes	yes	100	4	Ap.	†	1 yr.	yes	yes	yes	yes	no	yes
Knickerbocker Hospital	New York	30	30	.....	60	5	Ex.	Indef.	15 mos.	yes	yes	yes	no	no	yes
Lebanon Hospital	New York	yes	yes	yes	200	12	Tx.	Dec.	2 yrs.	yes	yes	yes	yes	no	yes
Lenox Hill Hospital	New York	200	125	.....	325	15	Ap.	Indef.	1 yr.	yes	yes	yes	no	no	....
Lincoln Hospital and Home (colored)	New York	116	113	391	420	14	Ex.	Indef.	21 mos.	yes	yes	yes	yes	yes	yes
Metropolitan Hospital [1]	New York	164	341	1,292	1,997	15	Ap.	†	18 mos.	no	yes	yes	yes	yes	yes
Mt. Sinai Hospital	New York	yes	yes	yes	521	22	Ex.	Feb.	18 mos.	yes	yes	yes	yes	no	yes
N. Y. Homeo. Med. Coll and Flower Hosp.	New York	85	85	30	200	9	Ap.	Indef.	18 mos.	yes	yes	no	no	no	yes
New York Post-Graduate Hospital	New York	yes	yes	yes	400	23	Ex.	Indef.	2 yrs.	yes	yes	yes	yes	no	yes
Park Hospital	New York	60	26	.....	66	2	Ap.	Indef.	1 yr.	no	yes	yes	no	no	yes
Presbyterian Hospital	New York	97	86	63	246	20	Ap.	†	2 yrs.	yes	yes	yes	yes	yes	yes
Roosevelt Hospital	New York	yes	yes	yes	285	16	Ex.	Indef.	1 yr.	yes	yes	yes	no	no	yes
Society of the New York Hospital	New York	yes	yes	yes	280	18	Ex.	Dec.	2 yrs.	yes	yes	yes	no	no	yes
St. Francis' Hospital	New York	175	175	.....	350	8	Ap.	‡	2 yrs.	no	yes	yes	no	no	no
St. Lawrence Hospital	New York	25	25	.....	50	2	Ex.	Indef.	1 yr.	no	yes	no	no	no	yes
St. Luke's Hospital	New York	yes	yes	yes	382	18	Ex.	†	2 yrs.	yes	yes	yes	yes	no	yes
St. Mark's Hospital	New York	yes	yes	.....	80	4	Ex.	Indef.	2 yrs.	yes	yes	yes	no	yes	yes
St. Vincent's Hospital	New York	130	70	102	300	16	Ex.	Indef.	2 yrs.	yes	yes	yes	no	$20	yes
Sydenham Hospital	New York	24	20	30	74	3	Ex.	Indef.	2 yrs.	yes	yes	yes	no	$20	yes
Volunteers Hospital	New York	40	30	8	78	6	Ex.	May	2 yrs.	yes	yes	yes	yes	$30	no
United Hospital	Port Chester	18	18	18	54	2	Ex.	Indef.	1 yr.	no	yes	no	no	$100	yes
Vassar Bros. Hospital	Poughkeepsie	30	31	27	88	2	Ap.	Indef.	1 yr.	yes	yes	yes	yes	$250 (a)	yes
Hahnemann Hospital	Rochester	yes	yes	yes	140	4	Ap.	May	1 yr.	no	yes	yes	yes	$25	yes
Rochester General Hospital	Rochester	124	85	76	285	6	Ap.	Indef.	1 yr.	yes	yes	yes	yes	yes	yes
Ellis Hospital	Schenectady	56	44	73	173	4	Ap.	May	1 yr.	yes	yes	yes	no	no	yes
Hospital of the Good Shepherd	Syracuse	yes	yes	yes	250	4	Ex.	‡	1 yr.	no	yes	no	no	no	yes
St. Joseph's Hospital	Syracuse	yes	yes	yes	125	4	Ex.	May	1 yr.	no	yes	yes	no	no	yes
Syracuse Memorial Hospital	Syracuse	yes	yes	yes	150	3	Ap.	May	1 yr.	no	yes	yes	no	no	yes
Staten Island Hospital	Tompkinsville	49	64	37	150	6	Ap.	¶	1 yr.	yes	yes	yes	yes	no	yes
Samaritan Hospital	Troy	42	46	85	173	4	Ex.	May	1 yr.	yes	yes	yes	yes	no	yes
White Plains Hospital Association	White Plains	8	9	27	44	4	Ap.	May	1 yr.	no	yes	no	no	$75	yes
St. John's Riverside Hospital	Yonkers	46	32	22	100	4	Ap.	Indef.	2 yrs.	yes	yes	yes	yes	$50	yes
St. Joseph's Hospital	Yonkers	41	41	.....	82	3	Ap.	Nov.	18 mos.	yes	yes	yes	no	no	yes
NORTH CAROLINA															
Highsmith Hospital	Fayetteville	55	20	4	79	2	Ap.	May	1 yr.	yes	yes	yes	yes	yes	yes
Rex Hospital	Raleigh	yes	yes	yes	75	2	Ap.	.....	6-12 mos.	no	yes	no	no	fees	yes
James Walker Memorial Hospital	Wilmington	64	64	47	175	2	Ap.	May	1 yr.	yes	yes	yes	no	$25	yes
NORTH DAKOTA															
Bismarck Evangelical Hospital [1]	Bismarck	yes	yes	yes	140	2	Ap.	Indef.	1 yr.	no	yes	yes	no	yes	yes
St. John's Hospital	Fargo	49	32	20	101	2	Ap.	May	1 yr.	no	yes	yes	yes	$300 (a)	yes
OHIO															
City Hospital	Akron	72	32	121	225	3	Ap.	Indef.	1 yr.	no	yes	yes	small	no	yes
Christ Hospital	Cincinnati	60	40	100	200	3	Ap.	April	1 yr.	yes	no	few	no	no	yes
Cincinnati General Hospital [1]	Cincinnati	128	130	592	850	29	Ex.	Indef.	18 mos.	yes	yes	yes	yes	no	yes
Good Samaritan Hospital	Cincinnati	yes	yes	yes	256	3	Ap.	.....	.....	no	yes	no	no	$28	yes
Jewish Hospital	Cincinnati	50	50	50	150	3	Ap.	Spring	1 yr.	no	few	yes	no	no	yes
Cleveland City Hospital	Cleveland	yes	yes	yes	805	17	Ex.	#	1 yr.	no	yes	yes	no	$12.50	yes
Lakeside Hospital	Cleveland	50	60	170	280	12	Ap.	Indef.	1 yr.	yes	yes	yes	yes	no	yes
Mt. Sinai Hospital [1]	Cleveland	yes	yes	yes	155	13	Ap.	May	1 yr.	yes	yes	yes	no	fees	....
St. John's Hospital	Cleveland	yes	yes	yes	150	4	Ex.	May	1 yr.	no	yes	yes	no	$300 (a)	yes
St. Luke's Hospital	Cleveland	yes	yes	yes	140	4	Ap.	April	1 yr.	yes	yes	yes	no	no	yes
St. Vincent's Charity Hospital	Cleveland	105	33	52	290	8	Ex.	**	1 yr.	no	yes	yes	yes	no	yes
Children's Hospital	Columbus	yes	yes	yes	80	1	Ap.	April	1 yr.	yes	yes	yes	no	$600 (a)	yes
Grant Hospital	Columbus	yes	yes	yes	190	2	Ap.	April	1 yr.	no	yes	yes	no	$35	yes

1. Women interns admitted.
* May and November.
† Every six weeks.
‡ November and May.
§ April and July.
¶ Every two and a half months.
# May and August.
** Every three months.
(a) Per year.

Name of Hospital	Location	Number of Beds				Interns		Examined or Apply in	Length of Service	Out-Patient Service	Accident Cases	Necropsies	Med. Library	Salary per Mo.	Training School for Nurses
		Surgical	Medical	Other	Total	Number in Hospital	By Appt. or Exam.								
Hawkes Hospital of Mt. Carmel	Columbus	91	68	16	150	4	Ap.	April	1 yr.	no	yes	yes	yes	no	no
Protestant Hospital Association	Columbus	50	50	16	116	6	Ex.	May	1 yr.	no	yes	yes	yes	no	yes
St. Francis' Hospital	Columbus	80	80	.....	160	3	Ap.	May	1 yr.	yes	yes	yes	yes	no	no
Miami Valley Hospital	Dayton	yes	yes	yes	295	6	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
Springfield City Hospital	Springfield	60	40	30	130	2	Ap.	June	1 yr.	yes	yes	yes	no	$25	yes
Youngstown Hospital	Youngstown	130	70	30	230	7	Ap.	May	1 yr.	yes	yes	yes	yes	$10	yes
OKLAHOMA															
St. Anthony's Hospital	Oklahoma City	80	40	30	150	1	Ex.	April	1 yr.	no	few	few	yes	$30	yes
State University Hospital	Oklahoma City	yes	yes	yes	176	4	Ap.	April	1 yr.	no	.....	no	yes	no	yes
OREGON															
Multnomah County Hospital	Portland	30	60	10	100	3	Ap.	Fall	1 yr.	no	yes	no	no	fees	yes
St. Vincent's Hospital	Portland	225	113	62	400	5	Ap.	April	1 yr.	no	yes	no	no	no	yes
PENNSYLVANIA															
Allentown Hospital [4]	Allentown	96	60	44	200	4	Ap.	April	1 yr.	yes	yes	yes	yes	no	yes
Bryn Mawr Hospital	Bryn Mawr	35	40	.....	75	4	Ap.	May	1 yr.	yes	yes	yes	yes	$50	yes
Chester Hospital	Chester	54	19	70	143	3	Ap.	April	1 yr.	yes	yes	yes	yes	yes	yes
G. P. Geisinger Memorial Hospital	Danville	40	40	10	90	1	Ap.	April	1 yr.	yes	yes	yes	no	no	yes
Easton Hospital	Easton	32	19	54	105	2	Ap.	April	1 yr.	yes	yes	yes	yes	yes	yes
St. Vincent's Hospital [1]	Erie	100	68	32	200	4	Ap.	May	1 yr.	yes	yes	yes	yes	$50	yes
Harrisburg Hospital [4]	Harrisburg	60	40	26	135	4	Ap.	May	1 yr.	yes	yes	yes	no	$480 (a)	yes
Lancaster General Hospital	Lancaster	28	28	71	127	4	Ap.	May	1 yr.	yes	yes	yes	yes	yes	yes
McKeesport Hospital	McKeesport	82	40	37	160	3	Ap.	April	1 yr.	no	yes	yes	no	yes	yes
Frankford Hospital	Philadelphia	80	80	10	90	3	Ap.	April	1 yr.	yes	yes	yes	yes	$30	yes
F. Douglas Memorial Hospital (colored) [1]	Philadelphia	yes	yes	yes	73	4	Ap.	April	1 yr.	yes	yes	yes	no	no	yes
Germantown Dispensary and Hospital	Philadelphia	88	62	25	175	5	Ap.		15 mos.	yes	yes	yes	yes	no	yes
Hahnemann Hospital	Philadelphia	90	70	145	330	10	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
Hospital of Protestant Episcopal Church [1]	Philadelphia	250	250	.....	500	12	Ex.	Indef.	2 yrs.	yes	yes	yes	no	no	yes
Hospital of the University of Pennsylvania	Philadelphia	81	101	224	406	16	Ap.	April	1 yr.	yes	yes	yes	y es	no	yes
Hospital of Woman's Medical College [2]	Philadelphia	18	18	64	100	6	Ap.	Indef.	1 yr.	yes	yes	yes	yes	no	yes
Jefferson Medical College Hospital [1 2]	Philadelphia	116	111	219	446	15	Ap.	Indef.	Indef.	yes	yes	yes	yes	no	yes
Jewish Hospital of Philadelphia	Philadelphia	yes	yes	yes	154	9	Ex.	April	1 yr.	yes	yes	yes	yes	no	yes
The Lankenau Hospital	Philadelphia	143	98	9	250	9	Ex.	†	27 mos.	yes	yes	yes	yes	no	yes
Methodist Episcopal Hospital	Philadelphia	yes	yes	yes	170	7	Ex.	May	1 yr.	yes	yes	yes	no	no	yes
Misericordia Hospital	Philadelphia	100	100	25	225	6	Ap.	May	1 yr.	yes	yes	yes	no	no	yes
Mt. Sinai Hospital	Philadelphia	yes	yes	yes	60	5	Ex.	May	15 mos.	yes	yes	yes	yes	no	yes
Pennsylvania Hospital	Philadelphia	170	145	.....	315	14	Ap.	Indef.	2 yrs.	no	yes	yes	yes	no	yes
Philadelphia General Hospital	Philadelphia	275	1,000	785	2,060	41	Ex.	Indef.	16 mos.	no	no	yes	no	no	yes
Philadelphia Polyclinic	Philadelphia	yes	yes	yes	135	14	Ap.	Jan.	18 mos.	yes	yes	yes	yes	no	yes
Presbyterian Hospital	Philadelphia	65	73	92	230	9	Ex.	†	1 yr.	yes	yes	yes	no	no	yes
Samaritan Hospital	Philadelphia	37	16	102	155	8	Ex.	Indef.	2 yrs.	yes	yes	yes	no	no	yes
St. Agnes' Hospital	Philadelphia	70	81	121	272	7	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
St. Joseph's Hospital	Philadelphia	57	28	96	181	8	Ex.	May	1 yr.	yes	yes	yes	no	no	yes
St. Mary's Hospital	Philadelphia	195	134	31	350	8	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
St. Timothy's Memorial Hospital	Philadelphia	38	34	78	150	3	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
Stetson Hospital	Philadelphia	28	12	15	55	3	Ap.	May	1 yr.	yes	yes	few	yes	$25	yes
Woman's Homeopathic Association [1]	Philadelphia	71	70	19	160	4	Ap.	May	1 yr.	no	yes	yes	yes	$20	yes
Woman's Hospital of Philadelphia [2]	Philadelphia	yes	yes	50	200	8	Ap.	Indef.	1 yr.	yes	yes	yes	yes	no	yes
Allegheny General Hospital	Pittsburgh	216	220	34	470	5	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
Homeopathic Medical and Surgical Hosp.	Pittsburgh	75	75	20	170	2	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
Mercy Hospital	Pittsburgh	220	125	30	375	15	Ex.	May	1 yr.	yes	yes	yes	yes	no	yes
Montefiore Hospital Association	Pittsburgh	yes	yes	yes	60	3	Ex.	April	1 yr.	yes	yes	yes	no	yes	yes
Passavant Hospital	Pittsburgh	75	35	70	140	3	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
Presbyterian Hospital	Pittsburgh	yes	yes	yes	175	2	Ap.	April	1 yr.	yes	yes	yes	no	no	yes
South Side Hospital	Pittsburgh	75	50	75	200	6	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
St. Francis' Hospital	Pittsburgh	yes	yes	yes	485	12	Ap.	May	1 yr.	yes	yes	yes	no	no	yes
St. John's General Hospital	Pittsburgh	134	23	43	200	4	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
St. Joseph's Hospital and Dispensary	Pittsburgh	yes	yes	yes	118	3	Ap.	May	1 yr.	yes	yes	yes	yes	$120 (a)	yes
St. Margaret's Memorial Hospital	Pittsburgh	40	40	20	100	3	Ap.	May	1 yr.	no	yes	yes	no	yes	yes
Western Pennsylvania Hospital	Pittsburgh	295	195	10	500	21	Ex.	May	1 yr.	no	yes	yes	yes	no	yes
Robert Packer Hospital	Sayre	75	75	32	180	3	Ap.	‡	1 yr.	yes	yes	yes	no	$25	yes
Hahnemann Hospital	Scranton	yes	yes	yes	118	3	Ap.	April	1 yr.	yes	yes	yes	yes	yes	yes
St. Luke's Hospital	South Bethlehem	75	40	11	125	5	Ap.	May	1 yr.	yes	yes	small	$10	yes	yes
Mercy Hospital	Wilkes-Barre	50	28	13	148	4	Ex.	March	1 yr.	yes	yes	yes	yes	no	yes
Wilkes-Barre City Hospital	Wilkes-Barre	yes	yes	yes	225	6	Ap.		1 yr.	yes	yes	no	yes	no	yes
Columbia Hospital [1]	Wilkinsburg	29	28	119	175	3	Ap.	May	1 yr.	no	yes	yes	no	yes	yes
PHILIPPINE ISLANDS															
Philippine General Hospital [1]	Manila	yes	yes	yes	600	32	Ex.	Spring	6-12 mos.	yes	yes	yes	no	no	yes
RHODE ISLAND															
State Infirmary	Howard	yes	yes	yes	100	2	Ap.	Indef.	1 yr.	no	no	yes	yes	$300 (a)	no
Memorial Hospital	Pawtucket	yes	yes	yes	72	1	Ap.	‡	1 yr.	yes	yes	yes	yes	$300 (a)	yes
Rhode Island Hospital	Providence	300	150	150	500	15	Ex.	Indef.	2 yrs.	yes	yes	yes	yes	no	yes
St. Joseph's Hospital	Providence	52	39	89	180	5	Ex.	Indef.	16 mos.	yes	yes	yes	yes	no	yes
Woonsocket Hospital	Woonsocket	yes	yes	yes	55	1	Ap.	Indef.	1 yr.	yes	yes	yes	no	no	yes
SOUTH CAROLINA															
Roper Hospital	Charleston	128	108	12	248	6	Ap.	May	1 yr.	yes	yes	yes	yes	no	yes
St. Francis Xavier Infirmary [3]	Charleston	19	21	10	50	2	Ap.	May	1 yr.	no	yes	yes	no	no	yes
South Carolina Baptist Hospital [1]	Columbia	yes	yes	yes	125	1	Ap.	May	1 yr.	no	few	no	no	$10	yes
TENNESSEE															
Baroness Erlanger Hospital	Chattanooga	yes	yes	yes	150	3	Ap.	April	1 yr.	no	yes	yes	no	$15	yes
Knoxville General Hospital	Knoxville	yes	yes	yes	175	3	Ap.	Indef.	1 yr.	yes	yes	yes	no	$30	yes
Baptist Memorial Hospital [1]	Memphis	300	150	90	540	15	Ap.	*	1 yr.	no	yes	yes	no	.....	.....
Memphis City Hospital [1]	Memphis	130	50	76	246	8	Ex.	March	1 yr.	no	yes	yes	yes	no	yes
St. Joseph's Hospital	Memphis	yes	yes	yes	250	4	Ex.	March	1 yr.	no	yes	yes	yes	no	no
George W. Hubbard Hospital	Nashville	yes	yes	yes	75	.....	Ex.	April	1 yr.	yes	yes	yes	yes	$50	yes
Nashville City Hospital	Nashville	yes	yes	yes	160	6	Ex.	Indef.	12-18 mo.	yes	yes	yes	yes	$15	yes
Nashville Protestant Hospital	Nashville	50	20	14	84	4	Ap.	April	1 yr.	no	few	few	no	no	no
St. Thomas' Hospital	Nashville	yes	yes	yes	260	4	Ap.	May	1 yr.	no	yes	few	no	no	yes
Woman's Hosp. of the State of Tennessee [6]	Nashville	yes	yes	yes	70	2	Ap.	May	1 yr.	no	yes	no	yes	$25	yes
TEXAS															
Hotel Dieu	Beaumont	140	50	20	210	1	Ap.	April	1 yr.	no	yes	yes	no	no	yes
St. Paul's Sanitarium	Dallas	yes	yes	yes	300	5	Ap.	May	1 yr.	no	yes	.....	no	fees	yes
Texas Baptist Memorial Sanitarium	Dallas	yes	yes	yes	250	4	Ex.	May	1 yr.	yes	yes	yes	no	$50	yes
John Sealy Hospital [3]	Galveston	yes	yes	yes	317	7	Ap.	May	1 yr.	yes	yes	yes	no	no	yes
St. Mary's Infirmary	Galveston	yes	yes	yes	275	3	Ap.	May	1 yr.	no	yes	no	no	no	yes
Baptist Sanitarium and Hospital	Houston	yes	yes	10	140	1	Ap.	April	1 yr.	no	yes	.....	yes	$10	yes
Southern Pacific Hospital	Houston	yes	yes	yes	166	2	Ap.	May	1 yr.	yes	yes	yes	yes	$50	no
St. Joseph's Infirmary	Houston	yes	yes	yes	180	4	Ap.	May	1 yr.	yes	yes	no	no	no	yes

1. Women interns admitted.
2. Women interns only.
3. Internships open only to graduates of local medical school.
6. Male patients accepted in private rooms only.
* One every three months.
† Every three months.
‡ April and June.
§ May and August.
¶ May and July.
# February and July.
** May and November.
(a) Per year.

Name of Hospital	Location	Number of Beds: Surgical	Medical	Other	Total	Interns: Number in Hospital	By Appt. or Exam.	Examined or Apply in	Length of Service	Out-Patient Service	Accident Cases	Necropsies	Med. Library	Salary per Mo.	Training School for Nurses
Robert B. Green Memorial Hospital	San Antonio	yes	yes	yes	200	4	Ex.	April	1 yr.	yes	yes	yes	no	fees	yes
Santa Rosa Infirmary	San Antonio	yes	yes	yes	150	1	Ap.	May	1 yr.	yes	yes	no	no	no	yes
King's Daughters' Hospital	Temple	yes	yes	.....	65	1	Ap.	Spring	1 yr.	no	yes	yes	yes	fees	yes
Santa Fe Hospital	Temple	yes	yes	yes	125	2	Ap.	April	1 yr.	yes	yes	yes	no	$50	yes
Temple Sanitarium	Temple	125	.....	.....	125	3	Ap.	May	1 yr.	no	yes	yes	yes	$600	yes
Providence Sanitarium	Waco	100	32	68	200	3	Ap.	May	1 yr.	yes	yes	yes	no	no	yes
UTAH															
Thomas D. Dee Memorial Hospital	Ogden	yes	yes	yes	70	2	Ap.	May	1 yr.	no	yes	few	yes	$40	yes
Dr. Groves' Latter Day Saints' Hospital	Salt Lake City	yes	yes	16	200	3	Ap.	*	1 yr.	no	yes	yes	yes	yes	yes
Salt Lake County Infirmary	Salt Lake City	32	24	69	125	1	Ap.	.....	1 yr.	no	yes	yes	no	yes	yes
St. Mark's Hospital	Salt Lake City	80	50	25	155	3	Ap.	May	1 yr.	yes	yes	yes	yes	$10	yes
VERMONT															
Mary Fletcher Hospital	Burlington	yes	yes	yes	125	5	Ap.	Indef.	15 mos.	yes	yes	yes	yes	yes	yes
Fanny Allen Hospital	Winooski	50	20	.....	70	2	Ap.	May	1 yr.	no	yes	yes	no	no	yes
VIRGINIA															
George Ben Johnston Memorial Hospital	Abingdon	yes	yes	yes	37	1	Ap.	May	1 yr.	no	yes	yes	no	$25	yes
Hospital of St. Vincent de Paul	Norfolk	106	46	98	250	4	Ap.	May	1 yr.	yes	yes	yes	no	$25	yes
Norfolk Protestant Hospital	Norfolk	65	40	60	165	3	Ap.	May	1 yr.	yes	yes	yes	yes	$25	yes
Memorial Hospital [3]	Richmond	134	60	56	200	8	Ap.	May	1 yr.	no	yes	yes	no	$600 (a)	yes
Retreat for the Sick	Richmond	yes	yes	yes	60	2	Ap.	April	1 yr.	no	yes	yes	no	no	yes
Sheltering Arms Free Hospital	Richmond	75	10	15	50	2	Ap.	April	1 yr.	no	yes	yes	no	no	yes
Virginia Hospital	Richmond	80	50	70	200	2	Ap.	May	1 yr.	yes	yes	yes	yes	fees	yes
Stuart Circle Hospital	Richmond	yes	yes	yes	65	2	Ap.	May	1 yr.	no	yes	yes	yes	$25	yes
Jefferson Hospital	Roanoke	yes	yes	yes	70	2	Ap.	May	1 yr.	no	few	yes	yes	$50	yes
University of Virginia Hospital	University	yes	yes	yes	200	11	Ap.	July	1 yr.	yes	yes	yes	yes	no	yes
WASHINGTON															
King County Hospital	Seattle	36	169	20	225	3	Ap.	May	1 yr.	no	yes	yes	yes	$30	no
Seattle City Hospital	Seattle	27	30	33	90	3	Ap.	May	1 yr.	yes	yes	yes	no	$50	yes
Seattle General Hospital	Seattle	75	50	25	150	1	Ap.	Feb.	2 yrs.	no	few	no	no	yes	yes
Marie Beard Deaconess Hospital	Spokane	38	8	9	55	1	Ap.	.....	1 yr.	no	no	no	no	$50	yes
St. Elizabeth's Hospital	Yakima	75	75	15	165	1	Ap.	April	1 yr.	.....	yes	yes	no	$50	yes
WEST VIRGINIA															
Charleston General Hospital	Charleston	yes	yes	yes	130	1	Ex.	April	1 yr.	no	yes	no	no	yes	yes
Sheltering Arms Hospital	Hansford	100	45	5	150	5	Ap.	May	1 yr.	no	yes	yes	yes	no	yes
Ohio Valley General Hospital	Wheeling	80	50	25	155	3	Ap.	†	1 yr.	yes	yes	yes	no	no	yes
WISCONSIN															
St. Joseph's Hospital	Ashland	75	75	25	195	1	Ap.	May	1 yr.	no	yes	no	no	no	yes
St. Agnes' Hospital	Fond du Lac	yes	yes	yes	130	2	Ap.	Indef.	1 yr.	no	yes	yes	yes	$20	yes
La Crosse Lutheran Hospital	La Crosse	66	32	8	106	2	Ap.	May	1 yr.	yes	yes	yes	yes	$50	yes
St. Francis' Hospital	La Crosse	yes	yes	yes	210	2	Ap.	Indef.	1 yr.	no	yes	yes	yes	$50	yes
St. Mary's Hospital	Madison	50	15	.....	65	2	Ap.	.....	1 yr.	no	few	no	no	$50	no
St. Joseph's Hospital	Marshfield	yes	yes	yes	135	1	Ap.	Indef.	1 yr.	no	yes	yes	yes	yes	yes
Columbia Hospital	Milwaukee	35	20	37	92	5	Ap.	Indef.	1 yr.	no	yes	yes	yes	$25	yes
Milwaukee Hospital	Milwaukee	80	30	52	162	3	Ap.	May	1 yr.	no	yes	yes	yes	$25	yes
Mt. Sinai Hospital	Milwaukee	yes	yes	yes	100	2	Ap.	.....	.....	yes	.....	yes	no	.....	yes
St. Joseph's Hospital	Milwaukee	95	27	12	134	3	Ex.	Indef.	Indef.	yes	no	yes	no	$30	yes
Milwaukee County Hospital	Wauwatosa	100	200	.....	300	8	Ex.	May	1 yr.	no	few	yes	yes	yes	yes

SECTION II, STATE HOSPITALS AND HOSPITALS FOR THE INSANE; TOTAL, 25; INTERNSHIPS, 73; BEDS, 41,722

Searcy Hospital	Mt. Vernon, Ala.	.....	.....	.....	1,000	1	Ap.	Spring	1 yr.	no	no	yes	no	$25	yes
Bryce Hospital	Tuscaloosa, Ala.	30	80	.....	1,350	2	Ap.	April	1 yr.	no	no	yes	no	$25	yes
Arkansas State Hosp. for Nervous Diseases	Little Rock, Ark.	.....	.....	.....	2,020	1	Ap.	Indef.	1 yr.	no	no	yes	yes	$50	no
Saint Elizabeth's Hospital	Washington, D. C.	.....	.....	3,429	3,429	17	Ex.	Indef.	Indef.	no	yes	yes	yes	$600 (a)	yes
Cherokee State Hospital	Cherokee, Ia.	10	.....	.....	1,150	3	Ap.	April	‡	no	yes	yes	yes	$50	yes
Independence State Hospital	Independence, Ia.	.....	.....	1,200	1,200	0	Ap.	Indef.	Indef.	no	no	yes	yes	yes	yes
East Louisiana Hospital for Insane (white and colored)	Jackson, La.	.....	.....	.....	1,600	3	Ap.	April	Indef.	no	yes	yes	yes	$50	yes
Augusta State Hospital	Augusta, Me.	.....	.....	1,100	1,100	2	Ap.	Indef.	Indef.	no	no	yes	yes	$600 (a)	yes
Psychopathic Dept., Boston State Hospital	Boston, Mass.	.....	.....	.....	110	7	Ap.	Indef.	Indef.	yes	no	yes	yes	no	no
Danvers State Hospital (Hathorne P. O.)	Danvers, Mass.	.....	.....	.....	1,485	3	Ap.	April	1 yr.	yes	yes	yes	yes	yes	yes
State Infirmary	Tewksbury, Mass.	yes	yes	yes	2,500	1	Ap.	.....	1 yr.	no	no	yes	no	yes	yes
State Psychopathic Hospital	Ann Arbor, Mich.	.....	.....	.....	62	1	Ap.	May	1 yr.	yes	no	yes	yes	$600 (a)	yes
Fergus Falls State Hospital	Fergus Falls, Minn.	yes	yes	yes	1,700	1	Ap.	April	Indef.	no	no	yes	no	$50	yes
New Hampshire State Hospital	Concord, N. H.	.....	.....	.....	1,300	1	Ap.	Jan.	9 mos.	no	yes	yes	yes	$50	yes
Central Islip State Hospital [1]	Central Islip, N. Y.	.....	.....	.....	5,180	2	Ex.	Indef.	Indef.	yes	yes	yes	yes	$1,000 (a)	yes
Gowanda State Homeopathic Hospital [1] [7]	Collins, N. Y.	.....	.....	.....	1,316	1	Ex.	Indef.	§	no	yes	yes	yes	$1,200 (a)	yes
Kings Park State Hospital [1]	Kings Park, N. Y.	yes	yes	yes	4,500	2	Ex.	Indef.	Indef.	yes	no	yes	yes	$1,000 (a)	yes
St. Lawrence State Hospital [1]	Ogdensburg, N. Y.	.....	2,236	.....	2,236	3	Ex.	Indef.	Indef.	yes	no	yes	yes	$1,000 (a)	yes
Hudson River State Hospital [1]	Poughkeepsie, N. Y.	.....	.....	3,324	3,324	3	Ex.	Indef.	Indef.	yes	yes	yes	yes	$1,000 (a)	yes
Bloomingdale Hospital	White Plains, N. Y.	.....	.....	350	350	2	Ap.	Indef.	Indef.	no	yes	yes	yes	$1,000 (a)	yes
State Hospital at Raleigh [1]	Raleigh, N. C.	.....	.....	1,150	1,150	2	Ap.	April	1 yr.	yes	no	yes	no	yes	yes
North Dakota State Hosp. for the Insane	Jamestown, N. D.	6	180	1,089	1,275	1	Ap.	April	4 mos.	no	yes	yes	yes	yes	no
State Hospital for the Insane	Allentown, Pa.	4	106	1,060	1,200	2	Ap.	April	3 mos.	no	yes	yes	yes	no	yes
State Hospital for the Northern Anthracite Coal Region of Pennsylvania	Scranton, Pa.	83	67	45	185	5	Ex.	May	1 yr.	yes	yes	yes	yes	$100 (a)	yes
Central Hospital for the Insane	Nashville, Tenn.	.....	.....	800	800	1	Ap.	Indef.	Indef.	no	yes	no	yes	no	yes

SECTION III, OTHER SPECIAL HOSPITALS; TOTAL, 99; INTERNSHIPS, 388; BEDS, 215,443

Tuberculosis Hospital	Washington, D. C.	.....	145	.....	145	2	Ap.	May	1 yr.	no	no	yes	no	no	no
U. S. Soldiers Home Hospital	Washington, D. C.	.....	.....	.....	300	5	Ap.	May	1 yr.	yes	yes	yes	no	$35	no
Chicago Lying-in Hosp. and Dispensary	Chicago, Ill.	.....	.....	110	110	3	Ap.	Indef.	6 mos.	yes	yes	yes	no	fees	yes
Chicago Maternity Hospital [8]	Chicago, Ill.	.....	.....	22	22	1	Ap.	**	6 mos.	yes	no	few	yes	fees	yes
Children's Memorial Hospital	Chicago, Ill.	.....	.....	.....	175	6	Ap.	††	8 mos.	yes	yes	yes	yes	no	yes
Durand Hospital of the Memorial Institute for Infectious Diseases	Chicago, Ill.	.....	.....	50	50	2	Ap.	.....	.....	no	no	yes	.....	no	yes
Home for Destitute Crippled Children [9]	Chicago, Ill.	.....	.....	.....	110	2	.....	.....	.....	yes	.....	.....	.....	.....	.....
Illinois Charitable Eye and Ear Infirmary	Chicago, Ill.	yes	yes	yes	200	7	Ex.	Indef.	1 yr.	yes	yes	no	no	no	no
Halstead Hospital	Halstead, Kan.	73	.....	.....	73	2	Ap.	Indef.	Indef.	yes	yes	yes	no	$200	yes
Pope Sanatorium	Louisville, Ky.	.....	.....	25	25	3	Ap.	May	1 yr.	yes	no	yes	yes	yes	no
Illinois Central Hospital	Paducah, Ky.	100	.....	.....	100	2	Ap.	Indef.	1 yr.	yes	yes	no	no	$25	no

1. Women interns admitted.
3. Internships open only to graduates of local medical school.
7. Previous training required.
(a) Per year.

* May and September.
† May and November.
‡ Summer months.
§ No limit.

8. Women interns preferred.
9. Affiliated with Rush Medical College.
** May and October.
†† April and November.

Name of Hospital	Location	Number of Beds				Interns		Examined or Apply in	Length of Service	Out-Patient Service	Accident Cases	Necropsies	Med. Library	Salary per Mo.	Training School for Nurses
		Surgical	Medical	Other	Total	Number in Hospital	By Appt. or Exam.								
Eye, Ear, Nose and Throat Hospital	New Orleans, La.	....	....	....	30	3	Ap.	Indef.	1 yr.	yes	yes	no	yes	$25 (d)	no
Maine Eye and Ear Infirmary (Gen. & Spec.)	Portland, Me.	yes	yes	yes	100	2	Ap.	June	1 yr.	yes	yes	yes	yes	no	yes
Baltimore Eye, Ear and Throat Charity Hospital [1]	Baltimore, Md.	yes	yes	....	40	2	Ap.	Indef.	1 yr.	yes	yes	yes	no	no	no
Hospital for Women of Maryland	Baltimore, Md.	yes	yes	yes	125	7	Ap.	July	1 yr.	yes	no	few	no	fees	yes
J. L. Kernon Hosp. for Crippled Children	Baltimore, Md.	75	....	....	75	2	Ap.	Indef.	Indef.	yes	few	few	yes	fees	no
Nursery and Child's Hospital	Baltimore, Md.	50	....	....	70	1	Ap.	April	1 yr.	yes	no	few	no	no	yes
University of Maryland Lying-In Hospital	Baltimore, Md.	....	....	33	33	2	Ap.	May	1 yr.	yes	no	no	yes	no	yes
Thomas Wilson Sanitarium	Mt. Wilson, Md.	....	70	30	100	3	Ap.	April	3 mos.	no	....	yes	no	no	yes
Maryland Tuberculosis Sanatorium	State Sanatorium, Md.	....	440	....	440	5	Ap.	May	1 yr.	no	no	no	no	$75	yes
Sheppard and Enoch Pratt Hospital	Towson, Md.	....	150	....	150	4	Ap.	Indef.	Indef.	no	no	few	yes	fees	yes
Boston Consumptives Hospital	Boston, Mass.	....	420	....	422	3	Ap.	....	6 mos.	yes	yes	yes	small	$1,000 (a)	no
Boston Lying-In Hospital	Boston, Mass.	....	....	53	53	8	Ap.	‡	6 mos.	yes	yes	yes	....	no	yes
Children's Hospital	Boston, Mass.	39	44	67	150	9	Ap.	Indef.	¶	yes	yes	no	no	no	yes
Collis P. Huntington Cancer Hospital [7]	Boston, Mass.	....	....	36	36	2	Ap.	Indef.	1 yr.	yes	no	yes	no	no	no
Dispensary and Hospital for Children [7]	Boston, Mass.	6	24	....	30	3	Ap.	Indef.	6 mos.	yes	no	yes	yes	no	yes
Infants' Hospital	Boston, Mass.	....	50	....	50	2	Ex.	Nov.	3 mos.	no	no	yes	yes	no	yes
Mass. Charitable Eye and Ear Infirmary	Boston, Mass.	yes	yes	....	215	8	Ex.	¶	16 mos.	yes	yes	yes	yes	no	yes
St. Mary's Inf. Asylum and Lying-In Hosp.	Boston, Mass.	....	....	....	250	2	Ap.	....	....	....	....	....	....	....	yes
Free Hospital for Women [7]	Brookline, Mass.	63	....	....	63	3	Ap.	Indef.	6 mos.	yes	no	few	small	no	§
Children's Free Hospital [10]	Detroit, Mich.	yes	yes	....	120	2	Ap.	Indef.	3 mos.	few	yes	yes	no	no	yes
Woman's Hospital and Infant's Home [2]	Detroit, Mich.	30	15	55	100	3	Ap.	Indef.	6 mos.	no	no	few	yes	yes	yes
Morgan Park Hospital	Duluth, Minn.	32	....	....	32	1	Ap.	Indef.	1 yr.	yes	yes	yes	no	no	no
Nopeming Sanatorium	Nopeming, Minn.	....	200	....	200	3	Ap.	Indef.	Indef.	yes	yes	yes	yes	yes	yes
State Sanitarium for Crippled Indigent and Deformed Children	St. Paul, Minn.	yes	yes	yes	130	2	Ap.	Indef.	Indef.	yes	no	yes	small	no	yes
Children's Mercy Hospital	Kansas City, Mo.	....	....	....	200	3	Ap.	May	1 yr.	yes	no	few	no	yes	no
Barnard Free Skin and Cancer Hospital	St. Louis, Mo.	30	15	10	45	5	Ex.	May	1 yr.	yes	few	yes	yes	no	yes
St. Louis Children's Hospital	St. Louis, Mo.	35	30	75	140	5	Ex.	Indef.	Indef.	no	no	yes	yes	yes	no
Montefiore Home Country Sanitarium	Bedford Hills, N. Y.	yes	yes	yes	218	3	Ap.	Indef.	6 mos.	no	no	yes	yes	no	yes
Kingston Avenue (Cont.) Hospital [1]	Brooklyn, N. Y.	....	531	....	531	16	Ex.	Indef.	6 mos.	no	no	yes	yes	$20	no
Children's Hospital	Buffalo, N. Y.	yes	yes	yes	110	3	Ap.	May	1 yr.	yes	yes	yes	yes	$40	yes
Babies' Hospital [1]	New York City	8	64	....	72	4	Ap.	*	18 mos.	yes	yes	no	no	no	yes
Herman Knapp Memorial Eye Hospital	New York City	....	....	51	51	2	Ap.	Indef.	18 mos.	yes	yes	yes	yes	no	no
Hospital for Deformities and Joint Diseases	New York City	60	....	....	60	2	Ex.	Nov.	1 yr.	yes	yes	no	no	yes	no
Jewish Maternity Hospital [1]	New York City	....	....	50	50	6	Ap.	*	6 mos.	yes	yes	no	yes	$25	yes
Lying-In Hospital of the City of New York	New York City	....	....	156	156	38	Ap.	Indef.	6 mos.	yes	no	no	yes	no	yes
Manhattan Maternity and Dispensary	New York City	....	....	....	28	5	Ap.	Indef.	3 mos.	yes	no	no	no	yes	yes
Memorial Hospital	New York City	....	....	100	100	4	Ap.	Indef.	1 yr.	no	yes	no	yes	yes	no
Montefiore Home and Hosp. for Chr. Dis.	New York City	50	410	....	460	9	Ex.	*	1 yr.	no	no	yes	yes	yes	yes
Neurological Institute of New York [7]	New York City	yes	yes	....	96	4	Ap.	Indef.	Indef.	yes	yes	yes	no	$600 (a)	yes
New York Eye and Ear Infirmary	New York City	175	....	....	175	10	Ex.	Indef.	16 mos.	yes	yes	yes	no	no	yes
N. Y. Infirmary for Women and Children [2]	New York City	yes	yes	yes	125	5	Ap.	Indef.	2 yrs.	yes	yes	yes	no	yes	yes
New York Nursery and Child's Hospital	New York City	....	....	283	283	10	Ap.	Indef.	6 mos.	yes	no	yes	no	fees	yes
New York Ophthalmic Hospital	New York City	74	42	....	74	2	Ex.	*	1 yr.	yes	yes	yes	yes	yes	no
New York Orthopedic Disp. and Hospital	New York City	109	....	....	109	3	Ap.	....	1 yr.	yes	no	yes	yes	no	no
New York Skin and Cancer Hospital	New York City	58	42	....	100	4	Ex.	....	1 yr.	yes	yes	yes	yes	no	yes
N. Y. Soc. Relief of Ruptured and Crippled	New York City	300	....	....	300	5	Ap.	Indef.	4 mos.	yes	no	yes	yes	no	no
Riverside Hospital	New York City	....	585	....	585	20	Ap.	Indef.	6 mos.	no	no	no	no	no	no
Riverside Hosp. of the City of New York	New York City	....	344	....	344	1	....	Indef.	6 mos.	yes	yes	yes	no	$240 (a)	no
Seton Hospital	New York City	....	240	....	240	3	Ap.	Indef.	1 yr.	no	no	yes	no	yes	no
Sloane Hospital for Women	New York City	47	....	226	273	7	Ap.	....	4 mos.	no	no	no	no	....	yes
St. Mary's Free Hospital for Children [4]	New York City	66	42	....	178	4	Ap.	Nov.	6 mos.	yes	yes	yes	yes	$30	yes
Willard Parker Hospital	New York City	950	....	....	950	50	Ex.	Indef.	6 mos.	no	no	no	no	$240 (a)	no
Woman's Hospital	New York City	128	....	100	228	9	Ex.	Indef.	1 yr.	yes	no	yes	yes	no	yes
United States Marine Hospital	Stapleton, N. Y.	48	154	....	202	5	Ex.	July	1 yr.	yes	yes	yes	yes	$60	no
Marshall Sanitarium	Troy, N. Y.	....	90	....	90	3	Ap.	April	1 yr.	no	yes	yes	no	$25	no
Rutherford Hospital	Rutherfordton, N.C.	70	....	....	70	0	Ap.	Indef.	Indef.	yes	few	few	yes	no	yes
Cincinnati Tuberculosis Sanatorium	Cincinnati, Ohio	....	....	....	430	2	Ex.	April	1 yr.	no	no	yes	small	no	no
American Oncologic Hospital	Philadelphia, Pa.	....	....	....	30	....	....	....	....	....	....	....	....	....	....
Children's Homeopathic Hospital	Philadelphia, Pa.	88	88	24	200	3	Ex.	May	1 yr.	yes	yes	yes	no	no	yes
Children's Hospital of Philadelphia	Philadelphia, Pa.	16	56	....	72	5	Ap.	Indef.	6-12 mos.	yes	yes	yes	no	no	yes
Jewish Maternity Hospital	Philadelphia, Pa.	....	....	40	40	1	Ap.	....	3 mos.	no	no	no	no	no	no
Pennsylvania Hospital, Department for Mental and Nervous Diseases	Philadelphia, Pa.	....	....	350	350	6	Ap.	Indef.	Indef.	yes	no	yes	yes	no	yes
Philadelphia Hosp. for Contagious Diseases	Philadelphia, Pa.	....	700	....	700	6	Ap.	Indef.	Indef.	no	no	few	no	no	yes
Philadelphia Lying-In Charity Hospital	Philadelphia, Pa.	....	....	81	81	2	Ap.	Indef.	3 mos.	yes	no	no	no	no	yes
Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases	Philadelphia, Pa.	14	37	85	136	3	Ap.	*	1 yr.	yes	no	yes	yes	no	yes
St. Vincent's Home and Maternity Hospital	Philadelphia, Pa.	....	....	....	450	....	....	....	....	....	....	....	....	....	....
St. Christopher's Hospital for Children	Philadelphia, Pa.	16	16	24	56	3	Ap.	....	1 yr.	yes	yes	few	no	....	yes
Wills Hospital	Philadelphia, Pa.	yes	yes	yes	112	2	Ex.	Indef.	18 mos.	yes	yes	no	yes	no	no
West Philadelphia Hospital for Women	Philadelphia, Pa.	yes	yes	yes	70	2	Ap.	Indef.	Indef.	no	yes	yes	yes	yes	yes
Woman's Southern Homes Hospital	Philadelphia, Pa.	15	13	24	52	3	Ap.	Indef.	1 yr.	yes	yes	yes	yes	yes	yes
Children's Hospital [7]	Pittsburgh, Pa.	yes	yes	yes	96	2	Ap.	Indef.	1 yr.	....	....	yes	....	$50	yes
Eye and Ear Hospital [5]	Pittsburgh, Pa.	43	....	....	43	1	Ap.	....	2 yrs.	yes	yes	yes	no	yes	no
Rosella Foundling and Maternity Hospital	Pittsburgh, Pa.	....	....	....	215	2	Ap.	....	....	no	no	yes	no	no	no
Tuberculosis League Hospital	Pittsburgh, Pa.	yes	yes	....	110	2	Ap.	April	1 yr.	yes	no	few	yes	one	yes
Butler Hospital	Providence, R. I.	....	200	....	200	1	Ap.	Indef.	Indef.	no	yes	yes	yes	$1,000 (a)	yes
City Hospital (contagious and tuberculosis)	Providence, R. I.	200	....	....	200	3	Ap.	Indef.	3-6 mos.	yes	no	no	no	yes	no
Providence Lying-In Hospital	Providence, R. I.	....	....	100	100	2	Ap.	Indef.	4 mos.	yes	no	yes	no	no	yes
Newell and Newell Hospital	Chattanooga, Tenn.	40	10	6	56	2	Ap.	May	1 yr.	yes	yes	yes	yes	yes	yes
Chesapeake and Ohio Hospital	Clifton Forge, Va.	75	....	10	85	1	Ap.	Indef.	1 yr.	no	yes	no	no	$30	yes
Elizabeth Buxton Hospital	Newport News, Va.	30	30	10	60	2	....	....	....	no	yes	no	....	....	yes
Sarah Leigh Hospital	Norfolk, Va.	....	....	70	77	2	Ap.	May	1 yr.	yes	yes	yes	yes	$25	yes
Grace Hospital	Richmond, Va.	50	....	....	50	2	Ap.	April	1 yr.	no	yes	no	yes	....	yes
Johnston Willus Sanitarium	Richmond, Va.	60	....	....	60	3	Ap.	April	1 yr.	no	yes	yes	yes	$50	yes
St. Luke's Hospital	Richmond, Va.	80	....	....	80	2	....	....	....	no	no	few	yes	no	yes
St. Elizabeth's Hospital	Richmond, Va.	50	....	....	50	2	Ap.	Indef.	1 yr.	no	yes	yes	yes	....	yes
Lewis-Gale Hospital, Inc.	Roanoke, Va.	50	....	4	54	1	Ap.	April	1 yr.	yes	yes	yes	yes	yes	yes
Fairmont Hospital No. 3	Fairmont, W. Va.	30	8	12	50	1	Ap.	†	6-12 mos.	no	yes	yes	yes	yes	yes
Milwaukee Children's Free Hospital [1]	Milwaukee, Wis.	yes	yes	yes	60	2	Ap.	Indef.	1 yr.	yes	no	yes	yes	yes	yes
St. Mary's Hospital	Oshkosh, Wis.	75	....	....	75	2	Ap.	Indef.	1 yr.	no	yes	yes	yes	no	yes

1. Women interns admitted.
2. Women interns only.
7. Previous training required.
10. Interns furnished from Harper Hosp.

* May and November.
‡ Every six weeks.
§ Medical, nine months; surgical and orthopedic, six months.

† April and November.
¶ Every four months.
(a) Per year.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

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SATURDAY, AUGUST 7, 1920

MEDICAL EDUCATION IN THE UNITED STATES

For the twentieth consecutive year we publish this week statistics dealing with medical education in the United States. The statistics are complete, and one needs but to review them to note the many improvements that have been made since 1901, when the publishing of these statistics was begun.

CHANGES OF THE YEAR

In all medical schools during the last session there were 14,088 students, or 1,036 more than during the previous session. These increases are in the first, third and fourth year classes, smaller second year classes following naturally the small freshman enrolment in the fall of 1918 caused by war conditions. The medical schools have passed the low ebb in enrolments which was expected with the enforcement of higher entrance requirements, and the pendulum is now swinging the other way. It is encouraging to note that the increased enrolments have been most marked in Class A medical schools, the number enrolled this year having increased from 87.9 to 89.6 per cent. of all students. The percentage in Class B schools decreased from 8.3 to 4.8, and in Class C schools it increased from 3.8 to 5.6. The figures for Class C schools, however, are uncertain since they are based on unverified reports.

The number of graduates this year was 3,047, or 391 more than in 1919. Note here, also, that the number of graduates of Class A colleges was increased by 470, while the numbers graduating from Class B schools decreased by 116. Of the Class C colleges, there were thirty-seven more graduates than in the previous year. It is pleasing to note that the number of graduates holding degrees from colleges of arts and sciences increased from 1,180 to 1,321, which is 43.5 per cent. of all graduates.

The number of medical colleges is eighty-five, the same number as last year. One Class B college [1] closed its doors, while a Class A college,[2] previously reported as having closed, determined to continue its existence for two more years.

1. The College of Physicians and Surgeons of Los Angeles, the College of Medicine of the University of Southern California.
2. Fordham University School of Medicine, New York City.

CHANGES IN SIXTEEN YEARS

The improvements in medical education during the last sixteen years have been noteworthy. In 1904, when the Council on Medical Education was created, the United States had more medical schools than all other countries of the world combined, the supply far exceeding the needs of the country. While the number of colleges has been reduced from 162 to eighty-five during the sixteen years, the number enforcing an entrance requirement of two years or more of collegiate work increased from four (2.5 per cent. of all colleges) in 1904, to seventy-eight (92.9 per cent.) in 1920. The number of medical students was decreased from 28,142 to 13,052—the lowest number—in 1919; but, during the same period, the number who had higher preliminary qualifications was increased from 1,761 (6.2 per cent. of all students) in 1904, to 13,408 (95.2 per cent.) in 1920. The number of graduates was reduced from 5,747 to 2,656—the lowest number—in 1919; but the number having higher preliminary qualifications was increased from 369 (6.4 per cent. of all graduates) in 1904, to 2,842 (93.3 per cent.) in 1920. While the annual totals of colleges, students and graduates have been decreased by about 50 per cent., the number of better colleges is nineteen times larger than in 1904, and the numbers of better qualified students and graduates are nearly eight times larger.

OTHER IMPROVEMENTS IN MEDICAL EDUCATION

Other improvements have also been made in medical schools. Formerly, many had no university connection, were conducted for profit, or were dependent solely on students' fees. Most of them had inadequate buildings and laboratory space, inadequate clinical material, and their curriculums were only partly graded. At present, all but a few are integral parts of high grade universities; they are enjoying increased incomes, either from state appropriations or private endowments; many have erected new college buildings and installed more and better equipped laboratories; they have employed larger numbers of full-time teachers; the majority are now carrying on more or less effective research; all have established closer relationships with hospitals furnishing more abundant clinical facilities, and the majority have adopted better methods of teaching in both laboratory and clinical departments. These changes are producing physicians who, both educationally and professionally, are far better equipped to assume the responsibility for the prevention and cure of disease than those graduating in any former period.

COST OF MEDICAL EDUCATION

These improvements have naturally added largely to the cost of medical education. Tuition fees have been increased by some of the medical schools, but not to so great an extent as to cover the cost of medical teaching, which is from three to several times what is charged for tuition fees. The difference, of course, is met by state aid and private endowment. The

increased fees, meanwhile, will not prevent any deserving student from obtaining a medical education through a lack of money. During the last sixteen years, about 350 scholarships have become available in thirty-eight of our better medical schools, and generous loan funds have been provided for students of this class.

FUTURE IMPROVEMENTS NEEDED

The World War materially emphasized the need of still further improvements, many of which were already recognized. Not only should there be improved methods of clinical instruction in our undergraduate schools, but better and more abundant opportunities should be established for physicians to obtain graduate work. Already courses are being established so that physicians can devote from one to three years to work in the various specialties. Shorter courses should also be provided whereby physicians can devote their entire time during a few weeks or a few months to work along any narrow line of work in which they may be particularly interested. The pressing need in medical education today is for better and more abundant opportunities for graduate medical education.

NEW PROGRESS IN OLD FIELDS OF THERAPY

The recognized importance of digitalis in modern therapy is attested by the fact that digitalis preparations of some sort now form a part of the drug armamentarium of every physician. Yet we suspect that few equally well known drugs are the subject of as much uncertainty and variation in efficacy in the hands of the "busy practitioner." Many decades have elapsed since Withering introduced digitalis into medical practice, but its therapeutic possibilities as well as its limitations are still worthy of renewed careful study.

Some of the progress in the field of digitalis therapy was summarized [1] at the New Orleans session of the Association. Foremost, perhaps, is the growing recognition of the need of pharmaceutic digitalis preparations of known potency. Now that the crude leaves which contain the active drugs are collected in many places where they are grown under a diversity of agricultural conditions, it would be surprising, indeed, if the content of potent principles were not variable in different lots. Under these circumstances, galenic preparations must necessarily vary with the leaf from which they are prepared. Thanks to the development of appropriate methods of physiologic assay, however, digitalis preparations can now be evaluated in terms of their real potency. In this way it has been ascertained that pharmacy no longer is dependent on restricted areas for drug plants; furthermore, products can be prepared which are stable and constant, as pharmacopeial standards demand.

Again, the physician has learned, largely through the leadership of Cary Eggleston,[2] how to estimate digitalis dosage on the basis of body weight, whereby the haphazard guesswork of "drops per day" has been improved on. Furthermore, the desirability of employing the drug in doses sufficient to produce the requisite beneficial results is being emphasized as never before. As the possibilities of overdosage can be recognized by the occurrence of symptoms such as nausea, or with greater refinement by the electrocardiogram, it becomes possible to push the dosage speedily to the limit of tolerance with corresponding therapeutic advantages. Under proper control the estimated amount of digitalis has even been given in a single dose so that effects which ordinarily require a week for their manifestation may be obtained within thirty-six hours.[3] There remains the important need of differentiating more clearly the patients for whom digitalis is actually indicated, so that it may be used both wisely and well. Finally, the medical observer should learn from the history of digitalis therapy that even in the long tilled fields of practice, experience and investigation may be applied to yield information that is new and useful.

THE DIETARY VALUE OF FRUITS

"Why do we eat fruits?" Few persons have stopped to consider the answer to this question, and it is somewhat doubtful whether an entirely satisfactory reply can be formulated. It requires only a moment's reflection, however, to conclude that any group of food products which enters so extensively into the dietary of mankind must have some virtue worthy of notice. Investigators are agreed that the fruits do not rank high as sources of energy to the body. Otherwise expressed, their calory values are rather low in comparison with the preponderance of the common food products. The fruits are almost without exception devoid of fats and poor in protein; at most the true nutrients are represented by a small content of carbohydrate, such as the sugars in the banana and the orange. Water forms a large part of their make-up in every instance.

Writers on nutrition in the past have been accustomed to refer to the value of the "mineral nutrients" in fruits, although it would be difficult, indeed, to make any unique claims for them in this respect. Of lime or phosphoric acid, for which the body is most likely to feel a need at times, the fruits surely cannot be regarded as valuable contributors. Many of these plant products contain organic acids, notably in the case of the citrus fruits. To these, dietary tradition has ascribed a laxative potency. When it is recalled, however, that most of the fruits also contain more or less indigestible vegetable constituents, such as waxes, gums and cellulose-like carbohydrates, one may well hesitate

1. West, H. F., and Pratt, J. H.: Clinical Experience with a Standardized Dried Aqueous Extract of Digitalis, J. A. M. A. **75**:77 (July 10) 1920.

2. Eggleston, Cary: Digitalis Dosage, Arch. Int. Med. **16**:1 (July) 1915.

3. Robinson, G. C.: Am. J. M. Sc. **159**:121 (Jan.) 1920.

to choose between organic acids and "roughage" for an explanation of the laxative action popularly accepted.

Certain fruits, as well as a number of green vegetables, have long been understood to exhibit a quite different potency best expressed in their antiscorbutic effects. The latter are now ascribed to vitamins, that group of as yet ill-defined properties or substances which promote well-being in ways that still require elucidation. However indefinable it may be at present, the rôle of orange juice in averting disaster under certain conditions of feeding or in promoting the nutrition on certain dietary regimens is beyond dispute.

Aside from the recognized value of various fruits as antiscorbutics,[1] a reason why they may be used liberally in the diet is given in the new investigations of Osborne and Mendel.[2] They have demonstrated that the fresh juices of the edible parts of the orange, lemon and grapefruit contain the vitamin frequently spoken of as water-soluble B or antineuritic vitamin. The efficiency of these juices is not lost by suitable modes of desiccation. It is, indeed, surprising to learn that the potency of orange juice, for example, in the water-soluble vitamin, is comparable, volume for volume, with that of cow's milk. This must not be understood, of course, to apply to the nutrients as sources of energy, but only to the content of vitamin. It is even hinted that orange juice may contain some fat-soluble vitamin; if so, it will have been demonstrated to yield all the at present known types of vitamins. Little wonder that this citrus fruit has acquired a dietary popularity. The advocates of a national temperance drink may be disappointed in the relatively poorer showing of grape juice as a source of the vitamin.

Apples and pears are not devoid of vitamin of the water-soluble variety, though they cannot be rated as rich in this food factor. Prunes are apparently somewhat richer in it. Osborne and Mendel justly remark that the new observations with fruits place the dietary value of these foods, hitherto recommended because of their salt content, their laxative properties, or their antiscorbutic property, in a new light as sources of water-soluble vitamin. It is not justifiable to ascribe superior virtues in this respect to all fruits, for the banana has already been found lacking in pronounced vitamin potency. What a vitamin-containing product like the orange may contribute to nutrition in man has been demonstrated in the growth of infants by Byfield, Daniels and Loughlin.[3] The fruits, always regarded as palatable, are having their real worth established at length in a scientific way.

1. Scurvy and Antiscorbutics, editorial, J. A. M. A. **71**: 2000 (Dec. 14) 1918; Further Facts Regarding Antiscorbutics, ibid. **72**: 728 (March 8) 1919; Antiscorbutics: I, ibid. **72**: 271 (July 26) 1919; II, ibid. **73**: 338 (Aug. 2) 1919; The Preservation of Antiscorbutic Fruit Juices, ibid. **73**: 538 (Aug. 16) 1919.

2. Osborne, T. B., and Mendel, L. B.: The Occurrence of Water-Soluble Vitamines in Some Common Fruits, J. Biol. Chem. **42**: 465 (July) 1920.

3. Byfield, A. H.; Daniels, Amy L., and Loughlin, Rosemary: The Antineuritic and Growth Stimulating Properties of Orange Juice, Am. J. Dis. Child. **19**: 349 (May) 1920.

Current Comment

HOSPITALS PROVIDING ACCEPTABLE INTERNSHIPS

We publish this week a list of the hospitals which, after careful consideration by the Council on Medical Education and Hospitals, have been considered in position to furnish satisfactory internships for medical graduates. This is the fourth revision of the list first printed in pamphlet form in 1914. Since that time, however, more complete data have been secured so that the present list is correspondingly more reliable. The list includes 593 hospitals having a total of 361,162 beds and providing opportunities for 3,420 interns. Those listed represent only about 10 per cent. of all hospitals in the United States having ten or more beds, although they have about 50 per cent. of the total bed capacity. Altogether, only 1,126 out of the 6,440 reported that they desired to have interns, and only 593 were found in condition to furnish satisfactory interships. Some did not send reports on which a reliable decision could be made. For a general training the student is urged to enter one of the 469 general hospitals. The state and special hospitals are better for those who have already had their general internships but who wish to secure further training in some particular specialty. This list will undoubtedly be of great service to medical students in selecting a hospital where a satisfactory internship can be obtained.

THE HOSPITAL INTERN PROBLEM

As noted in the previous comment, 593 of the 6,440 hospitals in the United States require annually 3,420 interns, or about 400 more than are turned out this year by the medical schools. Nevertheless, these hospitals represent a very small proportion of all hospitals in the country, and the number seeking interns is increasing. It can be seen, therefore, that the number of students graduating annually is not sufficient to supply interns for all the hospitals seeking them, far less to meet the demand if all general hospitals should desire to use them. This, meanwhile, is one of the bases for the claim that there is a dearth of physicians. It can readily be seen, however, that sufficient interns could not be provided for all hospitals even if the annual number of graduates exceeded by several times the normal output for this country. The intern problem must be solved in some other way. Many hospitals, even now, are employing physicians as residents or house officers at increasing salaries or with gradually increasing privileges in the way of practice. Interns, also, should be relieved of much of the work required of them which should be done by orderlies employed for that purpose. History-writing and records, which have depended largely on intern service, can be kept up by staff physicians through the use of stenographers. It is certain that the increased demand for interns does not justify either the lowering of educational standards or a multiplication of medical schools.

BENEFITS FROM MEETINGS OF PROFESSIONAL ORGANIZATIONS

The president of the American Bar Association,[1] in an open letter to the members, defines that organization as the "tie of fraternal interest in all that concerns the profession that binds it together." While the communication is addressed to members of the legal profession, its truth applies equally to physicians. The following statement regarding the value of the annual session is paraphrased but little in order that it shall appeal to Fellows and members of the American Medical Association:

> The sight of the leaders of the medical profession is stimulating. It adds much to the interest with which a medical paper is read if the author is not an abstraction but a creature of flesh and blood, whose personal appearance is known and whose voice has been heard. . . . Of these things I am sure: that the sense of brotherhood and the belief in the friendliness and nobility of the profession will be strengthened by such contact, and that faith in the zeal and integrity of members of the profession will be justified by experience. The reserve potential strength of a profession like ours can be summoned to effective exercise only through an association, national in scope, and wielding the consolidated strength of a united and thoroughly patriotic organization.

The meetings of the constituent state medical associations and of the component county medical societies present opportunities both for an interchange of professional knowledge and for an appreciation of personality which must make all better fitted to render professional services to their fellow men.

CAREERS FOR MEDICAL MEN

The higher educational qualifications now required of medical students and the greatly improved methods of instruction have resulted in multiplying the careers, aside from regular practice, which are now open for graduates of medicine. At the present time, for example, the graduate may enter the medical service of the Army, the Navy or the Public Health, Canal Zone or Indian services; he may find a special opportunity in industrial medicine; in insurance; as a school physician; in public health work; on hygiene boards; in administrative work in general hospitals, or as a medical attendant in an institution for the insane, the crippled or the feebleminded. There is also an increasing demand for medical missionaries and for medical teachers abroad. There is a growing demand for medical teachers and unusual opportunities in medical research. There is an increasing number of research institutes, providing special advantages with fair incomes for physicians especially qualified for investigative work. So many, indeed, are the opportunities for the well educated physician, aside from regular practice, as to more than justify the present reasonably high standards of preliminary and medical education. The great increase in the number of careers open to medical men are not only benefiting larger numbers of well trained graduates in medicine, but also, through their activity and influence, insuring a better understanding in the future of problems relating to public health and the prevention and cure of disease.

1. Carson, H. L.: Reasons for Joining the American Bar Association, July, 1920.

THE DIGESTION OF EGG WHITE BY INFANTS

In the progress of the sciences on which medical knowledge is based, many traditions and items of empiric information have received justification, often most unexpectedly, by the discovery that they are based on significant truths. On the other hand, the enlargement of the horizon of verifiable facts has not infrequently resulted in discrediting prejudices and preferences that have been fostered without demonstrable justification. Thus, uncooked starch has categorically been classed as a substance indigestible in the human alimentary tract and therefore to be shunned as a dietary component. Yet in a recent issue of THE JOURNAL,[1] the untenability of this long taught assumption was pointed out on the basis of unexceptionable evidence that healthy men can ingest, without detriment, quantities of "raw" starch exceeding 200 gm. a day. The myth that infants lack an amylolytic enzyme in their saliva has disappeared before actual investigation of the child rather than by reading a textbook. In fact, we suspect that more than one infant has been given some uncooked starch in the form of cereal decoction without untoward effects. Another tradition of the impotence of the alimentary apparatus in infancy has been broken by Grulee,[2] who has examined the stools after feeding egg white. Despite the fact that the extremely delicate precipitin test was used, the "raw" protein was found to have disappeared from the bowel in almost every case in which the quantity of egg protein ingested was not unduly large. As Grulee concludes, it would seem from his studies that egg albumin is as a rule broken down completely by the digestive processes in infants and children. This holds good even when egg white is used in small quantities for the new-born. The alternative that egg albumin is completely absorbed unchanged is unlikely.

NO DEARTH OF PHYSICIANS

The rapid decrease in the enrolments of medical students and in the number of physicians graduating annually during the last sixteen years has been frequently misinterpreted as having resulted in a scarcity of physicians in the United States. But what are the facts? In 1904, it will be remembered, this country had more than half the world's supply of medical schools; many of these were conducted for profit; competition was strong; solicitors visited offices, factories and crossroads to bring in students. As a result, medical schools were crowded far beyond the normal needs. Then came the campaign for improvement. Mergers of medical schools began to take place; others of extremely low grade ceased to exist, and higher entrance requirements were generally adopted. It was expected that the numbers of medical colleges, students and graduates would be considerably reduced. At the same time, the annual number of graduates with higher educational qualifications was largely increased. The only time in several decades when the demand for physicians exceeded the supply was during the brief

1. Behavior of Uncooked Starch in the Digestive Tract, Current Comment, J. A. M. A. 75:111 (July 10) 1920.
2. Grulee, C. G.: Precipitins for Egg Albumin in Stools, Am. J. Dis. Child. 20:15 (July) 1920.

period of the war, but then the demand was equally great for skilled workers in all other lines of human endeavor, except during the severe influenza epidemic. There is no scarcity of physicians so far as numbers are concerned, and the supply of better qualified medical men is being rapidly increased. Meanwhile, as shown by the statistics published this week, the pendulum is swinging back and the numbers of both medical students and graduates show marked increases over the previous year. It is satisfactory to know, however, that the increased quantity represents also an improved quality from the standpoint of both preliminary and professional education.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

DISTRICT OF COLUMBIA

Tribute to Dr. Kober.—On the occasion of the seventieth birthday of Dr. George M. Kober, March 28, his pupils, friends and co-workers in the Medical Society of the District of Columbia and allied scientific societies and civic organizations, at a dinner in his honor, tendered him a silver loving cup as a testimonial of their admiration and esteem. The same friends have joined in issuing an anniversary volume, which has just come from the press as the George M. Kober anniversary number of the *American Journal of Physical Anthropology*, of which Dr. Kober has been an associate editor since its inception. Besides a number of scientific articles dedicated to Dr. Kober, the volume contains an account of the special tributes recently paid to Dr. Kober and recounts his work for the cause of scientific medicine, public health and social welfare.

ILLINOIS

Clinics to Be Established.—A venereal disease clinic has been opened in the courthouse at Rock Island under the supervision of Dr. Daniel F. Paul.——Children of Rock Island suffering from tonsillitis or other throat infections may receive free treatment at a clinic to be established at St. Anthony's Hospital under the charge of Drs. Daniel F. Paul, Lewis Ostrom, Jr., Charles E. Robb and Carl J. F. Rochow.

Mobile Diagnostic Laboratory.—The mobile diagnostic laboratory maintained by the division of diagnostic laboratories of the state department of public health is proving of great value, not only in the suppression of epidemics, but in the rapid and accurate completion of communicable disease surveys. Under the present arrangement a laboratory technician may be at any point in the state within a very short time carrying with him all necessary material. This traveling laboratory is so equipped that it may be in active operation immediately after arrival.

Childbirth Mortality During the Influenza Epidemic.—The division of vital statistics has made a detailed investigation of the mortality of women in the puerperal state and of children prematurely born or dying during gestation, on account of the influenza and influenza-pneumonia epidemic. During the epidemic of January and February of this year, in the state outside of Chicago, there were 210 deaths of mothers and 171 deaths of infants from this cause, or a total of 381. Excluding Cook County the highest mortality was in Williamson County with 17 deaths and the next highest in Winnebago County with 15; Lake County was third with 14; LaSalle County fourth with 13, and Kane County fifth in order with 11 deaths.

INDIANA

Hospital Reopened.—Goshen Hospital, which has been closed on account of a difference of opinion between the board of directors and the physicians of the staff, has been reopened under the management of Mrs. Laura Fell White.

Chemical Research Workers Organize.—A new medical society has been organized in Indianapolis to emphasize the value of chemical research. It is composed of members of the Indianapolis Medical Society who are interested in that branch of the profession and starts out with a charter membership of more than sixty-six. Dr. Murray Hadley is president and Dr. Homer Hamer, secretary-treasurer.

MONTANA

Honor Medical Guests.—A dinner in honor of physicians visiting in Butte after the state medical society meeting at Helena was given by members of the staff of the Murray Hospital at the Butte Country Club, July 16. The guests of honor were Drs. Melvin S. Henderson, Rochester, Minn.; Cresswell T. Pigot, Roundup, president of the state medical society; Elmer G. Balsam, Billings, secretary of the society, and George E. Brown, Miles City.

Tuberculosis Fighters Elect Officers.—At the annual meeting of the Montana Association for the Study and Prevention of Tuberculosis held in Helena, July 12, the following officers were elected: president, Mr. H. R. Cunningham, Helena; honorary vice presidents, Gov. S. V. Stewart and senators T. J. Walsh, Helena, and W. A. Clark, Butte; vice presidents, Mrs. P. H. McCarthy, Butte, and Drs. Lewis Allard, Billings, and Oscar M. Lanstrum, Helena; secretary, Mrs. Sara E. Morse, and treasurer, Mr. T. O. Hammond, Helena.

State Health Board Building Dedicated.—The newly completed state board of health building at Helena was dedicated with impressive ceremonies, July 12. The principal addresses were delivered by Prof. W. M. Cobleigh, Bozeman, state chemist, on "The Relation of the Montana Public Health Association to the State Health Agencies"; the governor; Chairman Dan D. Donohue, Butte, president of the state board of health; Dr. James A. Hayne, Columbia, S. C., state health officer of South Carolina; Dr. Henry M. Bracken, Minneapolis, of the War Risk Bureau; Dr. Edward M. Larson, Great Falls, president of the state medical association; Mr. Harry Call, head of the state Red Cross; Dr. Oscar M. Lanstrum, Helena, and chancellor E. C. Elliott of the state schools.

NEW YORK

Counsel of State Society Resigns.—James Taylor Lewis, Esq., for the last twenty years legal adviser of the Medical Society of the State of New York, has resigned to take effect September 1. Mr. Lewis has been compelled to resign because the society has declined to increase his salary to keep up with the ever increasing expense connected with the conduct of his office.

Personal.—Dr. Samuel W. Hamilton, formerly a member of the staff of the Utica State Hospital, has been appointed chief medical director of the Hospital for Mental Diseases, Philadelphia.——Dr. Halsey J. Ball, Glens Falls, has been appointed sanitary supervisor of the district which includes the counties of Oneida, Herkimer, Madison and Otsego.——Dr. G. Walter Zulauf, assistant superintendent of the Buffalo General Hospital, has been appointed superintendent of the Allegheny General Hospital, Pittsburgh, succeeding Dr. John M. Lawler, resigned.

New York City

Jewish Memorial Hospital Acquires Property.—Inwood House, an institution for unfortunate mothers and infants on Two Hundred and Eighth Street, has been sold to the Jewish Memorial Hospital for $260,000. Possession will be given December 1.

Police Sanatorium.—Police Commissioner Richard E. Enright announces that a sanatorium for members of the metropolitan police force who become disabled by accident or disease will be erected in the Catskills or Adirondacks out of funds raised by the police field games this year.

Hospital Buys Seaside Home.—The directors of the Memorial Hospital, Brooklyn, have purchased the former home of the Children's Aid Society at Coney Island. They announce that a campaign will soon be started to raise funds to convert this building into a well-equipped hospital with accommodations for 150 patients.

Physician Obtains Writ.—Dr. Melville A. Hays has obtained a writ requiring the state prohibition director to show by what authority he refused to issue to Dr. Hays a

book of prescription blanks for liquor in accordance with the prohibition law. Dr. Hays claims that the blanks have been withheld in keeping with the policy of refusing to permit a physician to write more than 100 prescriptions for liquor within three months.

Personal.—Dr. Samuel W. Hamilton, Manhattan, medical director of the national committee for mental hygiene, has been appointed medical inspector in hospitals for the insane, with a salary of $5,000.——Dr. Otto U. Hoffman, Brooklyn, has resigned as dean of Long Island College Hospital, and has moved to New York City, to continue the practice of internal medicine.——Dr. Royal S. Copeland, commissioner of health, returned from his trip to Europe, July 15.——Dr. Jacob Geiger has been appointed director of the pathologic laboratories of the New York Diagnostic Clinics.

NORTH CAROLINA

Personal.—Dr. Everett F. Long, Lexington, whole-time health officer of Davidson County, has resigned to accept the same position with Wake County, including the city of Raleigh.——Dr. William H. Scruggs, Jr., Asheville, has resigned as health officer of Buncombe County.——Dr. Andrew J. Warren, health officer of Charlotte, has resigned to take effect not later than October 1, to accept a position with the Rockefeller Foundation.——Dr. Robert A. Herring has been appointed health officer of Wilmington.

Hospital Items.—Dr. Raymond L. Pittman, Fayetteville, announces the early completion and opening of the Pittman Hospital.——Mr. Fred L. Seely, Asheville, announces his purpose to construct and equip at Asheville an orthopedic hospital to contain at the beginning fifty beds and be open to crippled children without regard to residence. Dr. W. Pinkney Herbert and other leading Asheville surgeons will constitute the staff of the new institution.——Drs. Arthur T. Pritchard and James G. Anderson, Asheville, announce the early erection of a general medical and surgical hospital to cost $100,000. It will be of modern fireproof construction, and four stories high.——The Meriwether Hospital, Asheville, has recently become the property of Dr. Eugene B. Glenn, who has bought out the interests of the other owners. Dr. Glenn has announced his intention to continue the operation of the institution without change in the staff or management, but with improvements and additions to the equipment.

OHIO

Personal.—Dr. Joseph H. Wilson, Bellefontaine, is seriously ill as the result of a cerebral hemorrhage, July 16.

Ambassador to Visit Cincinnati.—At the celebration of the one hundredth anniversary of the founding of the Medical College of the University of Cincinnati to be held in Cincinnati, November 4, Sir Auckland Geddes, ambassador to the United States from Great Britain, is to be the principal speaker.

OKLAHOMA

Examining Board Election.—At the annual meeting of the Oklahoma State Medical Examining Board held in Oklahoma City, July 14, Dr. Lewis E. Emanuel, Chickasha, was elected president; Dr. William T. Ray, Gould, vice president; Dr. James M. Byrum, Shawnee, secretary (reelected).

Physician Loses License.—The Oklahoma State Medical Examining Board on July 14, is said to have revoked the license of Dr. John M. Lee, Oklahoma City, on account of claims of the Electro-Medical Doctors Institute, Tulsa, to cure gallstones and kidney disease by an electrical process, with which institute Dr. Lee was connected.

Physicians Must Report Venereal Diseases.—Under the rules which became effective July 1, and which have been promulgated by the state health commissioner, physicians of the state are required to report to the state health officer every case of venereal disease or kindred afflictions. Persons found infected will be detained and subjected to treatment and penalties are provided for violation of these rules.

PENNSYLVANIA

Personal.—Dr. W. S. Moore, Washington, has been appointed a medical missionary to Egypt under the United Presbyterian Board of Foreign Missions and will sail in September——Dr. William J. Crookston, Pittsburgh, associate medical director of the state health department, has been appointed chief of the division of tuberculosis clinics, succeeding Dr. Karl Schaffle, Camp Hill.——Dr. Joseph J. Meyer has been appointed chief of the genito-urinary dispensary, Johnstown.——Dr. Samuel S. Hill, Wernersville, superintendent of the South Mountain Asylum for Chronic Insane, has been appointed chairman of the Berks County Chapter, American Red Cross.——Dr. Thomas H. A. Stites, medical director of the State Tuberculosis Sanatorium at Hamburg since 1914, has resigned, effective August 1, and has entered the U. S. Public Health Service with the rank of surgeon.

Philadelphia

Hospital Item.—Waynesboro has secured more than $200,000 of the $300,000 required for its new hospital.——The Reading Hospital building fund has now more than $400,000 of the $750,000 required.

Personal.—Dr. Chevalier Jackson, professor of laryngology at Jefferson Medical College, has been appointed professor of bronchoscopy in the University of Pennsylvania, but will not sever his connection with Jefferson Medical College.——Dr. David A. Smith has been appointed chief resident physician at the University Hospital, Philadelphia.——Dr. John E. B. Buckenham has resigned as superintendent of the Hospital for Contagious Diseases, to become librarian of the Masonic Grand Lodge of Pennsylvania.——Dr. John Wanamaker III has been reinstated as police surgeon by Director Cortelyou. ——Dr. John D. Donnelly has been appointed pediatrician at the State Tuberculosis Clinic.

TEXAS

More Deaths from Bubonic Plague.—Two additional deaths from bubonic plague were announced, July 29, in Galveston by P. A. Surg. J. Holmes Smith, U. S. P. H. S. This brings the total number of cases to five, four of which have proved fatal. Both of the deceased were Mexicans.

Contribution for Venereal Disease Work Necessary.—Dr. Oscar Davis of the state health department, Austin, has informed the city council of Houston that it will be necessary for the city to contribute $12,000 if the venereal disease work is to be carried on for the remainder of the year. For nearly two years the city has furnished half of the annual amount needed to carry on the work, and the federal government one half. The government appropriation for the work is now said to be exhausted.

VIRGINIA

Medical Officers Club Organized.—At a meeting held recently at Hampton Roads Yacht Club, Willoughby Beach, the Medical Officers' Club of Norfolk was organized with an initial membership of fifty. Lieut.-Col. Junius F. Lynch was elected president, and Capt. James L. Stringfellow, secretary.

Appropriation for Inspection and Correctional Work.—The executive committee of the state board of health on July 13, adopted a resolution providing that the sum of $20,000 be appropriated to be used as state aid to counties or communities for medical and physical inspection and correctional work through the public schools. This financial aid is limited to one half of the amount appropriated for the same purpose by the local authorities.

Improvement of Health of Convicts.—A conference was held at the state penitentiary, July 12, to endeavor to bring about ideal health conditions at the state penitentiary, the state farm, and the various convict camps. At this conference were representatives from the board of directors of the penitentiary, the president, faculty and board of trustees of the Medical College of Virginia, the state department of health, the U. S. Public Health Service and the Medical Society of Virginia.

Personal.—Dr. William P. Caton, Accotink, field director for the state department of health of the Pittsylvania County unit, has been appointed health officer of Fairfax County, succeeding Dr. Edward L. Flanagan, Richmond, resigned.—— Dr. James H. Hargrave, Petersburg, charged with the performance of a criminal operation was found not guilty, July 1. ——Dr. Dean B. Cole, Chilhowie, executive secretary of the state tuberculosis association, has resigned to accept a position on the resident staff of the Bellevue Hospital, New York City.

WASHINGTON

Personal.—Dr. James E. Crichton, Seattle, formerly vice chairman of the Seattle Red Cross, has succeeded Mr. Earl Kilpatrick as division manager of the northeastern division. ——Dr. Frank A. Plum, Seattle, has been appointed medical

director of the City Hospital, Philadelphia, succeeding Dr. Paul A. Turner, resigned.

Trudeau Society Election.—The Washington Trudeau Society was organized at the closing session of the annual convention of the Washington Tuberculosis Association at North Yakima, July 9. Membership in this society is restricted to physicians who confine their practice to tuberculosis, and the following officers were elected: president, Dr. Fredericka Slyfield, Seattle; vice president, Dr. Frank M. Miller, Spokane; honorary vice presidents, Drs. Edward R. Baldwin, Saranac Lake, N. Y., and Christen Quevli, Tacoma; secretary, Samuel J. Cary, Seattle, and treasurer, Dr. Leon G. Woodford, Everett.

WYOMING

State Society Meeting.—The Wyoming State Medical Society will hold its eighteenth annual meeting at the Elks' Home, Cheyenne, August 9 and 10, under the presidency of Dr. George P. Johnston, Cheyenne. On the first evening the delegates will be entertained at dinner at the Cheyenne Country Club, by the Laramie County Medical Society. Among the visiting speakers will be Drs. James M. Patton, Omaha, whose subject is "The Doctor and the Adult Blind"; Josiah N. Hall, Denver, who will present a paper on "The Diagnosis of Empyema," with roentgen-ray pictures, and Dr. Thomas E. Carmody, Denver, who will speak on "Focal Infections."

CANADA

New Professors from Great Britain.—Principal Bruce Taylor of Queens' University, Kingston, Ont., and Dr. Walter T. Connell are in England and have engaged Dr. James Miller, Edinburgh, for the chair of pathology, and Dr. L. J. Austin, London, for the chair of clinical surgery at the university. Additional important appointments are shortly to be made.

Public Health News.—During the five year period from 1914 to 1918, and excluding influenza, tuberculosis claimed more lives in Saskatchewan than any other communicable disease. The average death rate for tuberculosis was 45 per hundred thousand as compared with 6.2 for measles; 8.2 for whooping cough; 8.2 for diphtheria, and 8.8 for typhoid fever. There is a steady increase in the death rate from tuberculosis from year to year. In 1914 it was 35.2 per hundred thousand; 1915, 38.2; 1916, 44.6; 1917, 47.4; 1918, 54.5, making the average for the period 45.

Hospital News.—St. Michael's Hospital, Toronto, has in view enlargement of that institution, provided the serum treatment of cancer as introduced by Dr. Thomas J. Glover, Toronto, proves a permanent success. Dr. John A. Amyot, Ottawa, deputy minister of public health, has paid a visit to Toronto and inspected the patients, microscopic specimens and pathologic exhibits, and expresses his opinion that the serum is promising. The hospital authorities have asked Dr. Julian D. Loudon, Toronto, chief in medicine, to work with Dr. Glover, and Dr. Edmund E. King, Toronto, surgeon to the hospital, has also been pressed into service in the cancer clinic.

Personal.—The Canadian Red Cross Society has appointed Dr. Ruggles K. George, Toronto, as director of information on public health.——Dr. Peter MacNaughton, formerly assistant superintendent at the Hamilton, Ont., Hospital for the Insane, has been appointed superintendent of the Coburg Hospital, which was formerly the Ontario Military Hospital, but which has been made a provincial hospital for insane.——Dr. William K. Ross of the Kingston Provincial Hospital for the Insane, has been appointed superintendent of the Brockville Hospital for the Insane, succeeding the late Dr. John C. Mitchell. Dr. Fulton S. Vrooman, who has been assistant superintendent at Brockville, has been transferred to a similar position at the Toronto institution. Dr. George E. Kidd, on the staff at Brockville, succeeds Dr. Vrooman, and Dr. Robert D. Fletcher, Winnipeg, Man., goes to the Toronto institution as an assistant physician.

GENERAL

Secretary of American Medical Association Undergoes Operation.—Dr. Alexander R. Craig was operated on, August 4, for cholelithiasis. As we go to press his condition is reported as favorable.

Diagnosis School Established.—On account of the numerous tuberculosis activities which have centered recently in Springfield, Ill., this city has been selected by the United States Public Health Service as the location for a school of diagnosis for acting assistant surgeons and local examiners assigned to the care of sick and wounded soldiers in the eighth district, comprising the states of Michigan, Wisconsin and Illinois.

Warning.—A Texas physician sends the information that a man calling himself J. P. McLay and claiming to be a representative of the Jones Service Company of Kansas City is traveling in Texas, selling a service fee for $70. He suggests that this may be the same individual against whom a warning was issued in THE JOURNAL, July 24, under the name of J. P. McKeen.

Emergency Dressing Parcel.—A standard emergency surgical dressing parcel has been adopted by the American Red Cross, and endorsed by the Surgeon-General of the Army, the Section on Surgery of the American Medical Association, the American College of Surgeons, and the Conference Board of Physicians in Industrial Practice. The parcel is wrapped in heavy brown paper, sterilized and paraffined, and contains ten gauze compresses, one absorbent pad, one rolled wadding bandage, one muslin bandage, one gauze bandage, one triangular bandage and one safety pin.

Appropriation for Social Hygiene Work.—In the sundry civil bill, the sixty-sixth Congress appropriated $1,565,000 to the United States Interdepartmental Social Hygiene Board for use during the fiscal year ending June 30, 1921. This includes $80,000 for the expenses of the board; $400,000 for assisting states in protecting the military and naval forces of the United States against venereal diseases; $750,000 for allotment to the various states for the prevention, treatment and control of venereal disease; $85,000 for payment to universities, colleges and other suitable organizations and institutions to discover more effective measures in the prevention of venereal disease, and $250,000 for payment to universities, colleges and other suitable institutions and organizations to discover and develop more effective educational measures in the treatment of venereal disease.

FOREIGN

Gasoline Privileges for Physicians.—Farmers, physicians and veterinarians are given priority in the distribution of gasoline in France, according to a recent decree.

Appropriation for Work on Heredity.—The Prussian Academy of Sciences has granted Dr. Agnes Bluhm 1,000 marks to continue her experimental work on problems of heredity.

Tribute to Depage.—In recognition of Depage's work at the hôpital de l'Océan, in the narrow strip of Belgium that was not invaded by the enemy, his pupils and friends are planning to present him with a torso bust, the work of a leading Belgian sculptor.

Tribute to Pérez.—Our Vienna exchanges mention that the university authorities recently held a special meeting in honor of Dr. F. Pérez, the ambassador from Argentina in Vienna, in token of gratitude for his efforts on behalf of the university. Pérez' name is associated with the bacteriology of ozena.

Disease Menaces Italian Charcoal Burners.—Pellagra, malaria and influenza are said to have caused the deaths of many Italian charcoal burners in the district of Citta di Castello during the last few months. This is believed to be due to the universal diet of polenta and life in the unhealthy marshes surrounding the town.

Petition to Name a Street for Surgeon.—The *Paris médical* relates that twenty of the members of the municipal council of Paris have signed a petition asking that some street in Paris be named for Dr. H. Morestin in token of appreciation of his services during the war, so many persons owe to him the reconstruction of their faces.

International Surgical Congress.—At the meeting of the Fifth International Surgical Congress, held in Paris, July 19 to 22, representatives of thirteen nations presented papers. During the mornings, clinics were held in the various hospitals of Paris; in the afternoons and evenings, the scientific program was carried out. Sir William MacEwen, professor of surgery in Glasgow University, was elected president, and London was selected as the next place of meeting, the date being fixed as July 16, 1923.

Swedish Government Aids Medical Journals.—The *Svenska Läkartidningen* records the appropriation by the government of 5,000 crowns to aid the Swedish Medical Association in publishing its three journals, the semimonthly, quarterly and transactions. Three journals devoted to hygiene are given from 1,000 to 1,500 crowns, and four specialist journals from 500 to 1,200. To aid in starting the new *Acta Oto-Laryn-*

golopica, 4,000 crowns are appropriated. Each of the journals specified is to donate a number of copies to the university libraries.

Medical Journals Increase Subscription Price.—The medical section of the Italian Association of the Scientific Press has been considering that the cost of paper has gone up 1,000 per cent. and of printing 300 per cent., with other expenses increasing to correspond, and consequently it has voted to increase by 100 per cent. the subscription price of the Italian weekly medical journals for the last half of 1920, even for the subscribers already enrolled. Other journals not published so often are to have the subscription price increased by 50 per cent. The notice appears in the *Policlinico* of June 28, signed by Prof. G. Sanarelli, president of the association.

Medical Center in Constantinople.—Americans in Constantinople have established a hospital as the nucleus of a medical center in the Near East. Admiral Bristol, the American high commissioner, is chairman of the board of directors, which includes representatives of the American Chamber of Commerce, the American Red Cross, the American Committee for Relief in the Near East, the Constantinople College for Women, various missionary boards, and Robert College. The equipment for the hospital, which will have a capacity of 100 patients, is to be supplied by the American Red Cross, and the personnel by the American Red Cross and American Committee for Relief in the Near East. Dr. A. R. Hoover will be director of the hospital, and Dr. Elfie Richards Graff, assistant director.

Deaths in Other Countries

Dr. **J. Bjerrum**, the leading ophthalmologist of Denmark, aged 68. Bjerrum's method of perimetry, test types, etc., and his manuals of ophthalmology have made his name familiar. He retired from his chair in the medical faculty of Copenhagen in 1910.——Dr. **L. Rydygier**, professor of surgery at the University of Lemberg, a pioneer in resection of the stomach and of invagination, aged 70.——Dr. **J. B. Miranda**, formerly professor of toxicology and pharmacy in the medical faculty of Santiago, Chile, at an advanced age.

Government Services

Hospitals to Take War Risk Cases

Sixteen naval hospitals have been notified that they will be expected to take in war risk cases for reconstruction, provided they have sufficient available personnel. These patients are to be in addition to Navy or Marine Corps patients. There are at present 3,200 beds available at naval hospitals. When accommodations can be furnished, local representatives of the Bureau of War Risk Insurance will be notified.

Return of General Gorgas' Body

Instructions have been issued for the United States Army Transport *Pocahontas* to stop at Southampton, England, on its return from Europe to take on board Mrs. Gorgas and the body of General Gorgas. The *Pocahontas* was expected to touch at Southampton, about July 26. The final arrangements for General Gorgas' funeral will not be announced until the arrival of the body in the United States, but the interment will be at Arlington.

Schools for Medical Officers

Arrangements have been made with the Surgeon-General that not to exceed five medical officers of the National Guard may attend the course at the Army Medical School, Washington, D. C., which begins on or about October 1, and continues about eight months. Applications through the Adjutant-General of the respective states should be made to the Militia Bureau before September 15.——The Adjutant-General of the Army has approved the application of the Surgeon-General for the development of the field school for the medical department on the Carlisle, Pa., military reservation. Notice will be given later of the opening of this school. National Guard officers may attend this school and will be entitled to the same pay (not above that of captain), quarters, etc., while actually in attendance at the school, and the same travel allowances to and from the school as are allowed officers of the Regular establishment.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 17, 1920.

The Increased Subscription of the British Medical Association

As stated before, the subscription to the British Medical Association has been increased by 50 per cent.—from $10.50 to $15.75. The reasons given are the depreciation in the value of money and increase in virtually all forms of expenditure. Comparing the year 1919 with 1918, the cost of printing increased by $20,000, paper by $17,500, staff expense by $10,000, and meetings of the council and committee by $11,500. These items, with increased capitation grants to branches, amounted to a total increase of $65,000. Against these increased expenses there was an increase of subscriptions of about $10,000, and from advertisements and sale of the *Journal*, of $45,000. For the year 1920 the estimated expenditure is $435,000 and income $418,000. Almost every item of expenditure is expected to be increased. Moreover, there are new items of expenditure—a Scottish office with a whole-time secretary which will cost $6,000 a year; an intelligence department costing about $4,000 a year, and the newly established lectures, which cost probably $1,000. The increased annual expenditure for 1920 may easily prove to be $75,000. If the subscription were not raised, a net increase of 1,000 members would be expected in 1920. The average number of resignations from the association in recent years has been 472. In 1913, when the subscription was raised from $6 to $10.50, the number of resignations was 2,675. It may be concluded, therefore, that the increased subscription will cost the association 2,200 members. The membership is now more than 22,200, so that if the same number leave the association it would be left with a membership of 20,000. Allowing 7,000 for oversea members and those who pay a reduced fee as junior members of the profession, the association would have $68,000 additional income. A smaller increase of subscriptions would meet the immediate needs, but it is considered necessary to have a reserve so as to be able to meet additional demands without further increase of subscription.

Failure of Sanatorium Treatment

Dr. W. H. Dickinson, medical adviser of the insurance committee of Newcastle on Tyne, gives a depressing picture of the prospects of the industrial consumptive. Out of 1,086 patients, only fourteen in whom tubercle bacilli were found in the sputum had secured "arrest" of the disease and were still alive and well when the report was completed. Even this is not the worst, for in respect of six of these there was some doubt as to the accuracy of the original observation, leaving only eight certain cases. This gloomy outlook is further illustrated by the histories of 1,126 patients, of whom 733 died while receiving sanatorium benefit, and a further sixty-four died after discontinuing the treatment, making a total of 797 known deaths. Treatment was stopped on account of "arrest" of disease in only 108 instances. Of these persons, eighty-one are now working or fit for work, four are known to have died, nine are still alive but have relapsed, and fourteen cannot be traced. The report proceeds: The outlook for a patient of the industrial classes in whose sputum tubercle bacilli have been demonstrated on at least two occasions is well-nigh hopeless under conditions similar to those that have prevailed in the past. Although much suffering has been relieved and many lives have been prolonged, the results achieved, as measured by the number of patients cured or restored to full working capacity, are very disappointing, considering the amount of money and energy expended, and

it behooves us to find out where we have failed and why. Ninety per cent. of the patients treated in the sanatorium were discharged improved in a greater or lesser degree, but the results were not lasting, and in the great majority of the cases relapse occurred under domiciliary treatment owing to failure to reproduce sanatorium conditions, or anything approaching them, in the home. It follows, then, that much of the money expended on sanatorium treatment has been wasted, and this state of affairs will continue until the conditions under which domiciliary treatment is administered are drastically reformed. Domiciliary treatment has proved the weakest link in sanatorium benefit, and this is particularly unfortunate, seeing that more than 80 per cent. of the treatment granted was given to the patient while living in his own home.

PARIS

(From Our Regular Correspondent)

July 16, 1920.

Compulsory Physical Education

The senate recently passed an act to organize physical education on a national basis. The first article of the act provides for compulsory physical education of children of both sexes, boys over 6 years old until their embodiment in the army or navy, and girls in primary and secondary schools, according to the special regulations governing public education.

Medical Theses

At its last session the council of the Paris medical faculty again took up the question of theses. Heretofore, each graduate was required to deposit 200 copies of his thesis; this has been reduced to sixty-five, with the object of reducing the expense incident to printing the pamphlets. As these copies were intended primarily for exchange with foreign universities, it follows that the exchanges would necessarily be restricted and this would detract considerably from the diffusion of French science abroad and of foreign works in France. The council therefore decided that the measure is susceptible of further study, the saving realized by the student being of less importance than the interference with the diffusion of French thought. An inquiry among publishers showed, in fact, that the saving amounts to about 40 francs for each printed signature, perhaps 100 or 120 francs on the average thesis costing 500 francs.

The Dangers of Neomalthusianism

For some time now, contraceptive apparatus have been sold openly by a large number of druggists and rubber merchants, and it is not an unusual sight to see them displayed in the show windows. This deplorable state of affairs moved the Alliance nationale pour l'accroissement de la population française to address a special appeal to all druggists of France, asking them, in the interest of the country, to discontinue the sale of such apparatus. In its appeal, the Alliance laid stress on the fact that the reduction of the birth rate constituted a very grave danger to France.

Unfortunately this is all the more true since at the present time a neomalthusian campaign is under way in certain industrial centers. It has gotten so that at Roubaix-Tourcoing a communist syndicate, the Union des travailleurs, during the first five days of July distributed more than 40,000 copies of a pamphlet in street cars and at factory gates, even tossing them into the doorways of workmen's houses. Although the pamphlet bore the printer's name, no legal action has been brought against the authors, printers and distributors. For that reason the consortium of the textile industries of Roubaix-Tourcoing, constituted of 312 manufactures employing more than 70,000 workers, which, since March 1, has been granting a family bonus of 1 franc for each child and a maternity allowance of 200 francs, has protested vigorously against the inaction of public authorities. The consortium has expended 25,000 francs per day in family bonus since March 1, and it is certainly regrettable that all these efforts are neutralized by an infamous campaign conducted in broad day.

Committee on Social Hygiene

A campaign committee on social hygiene and prophylactic instruction was recently organized for the following purposes: (1) the establishment of a bureau of information, literature and publicity on all questions relating to social hygiene; (2) the creation of centers of popular instruction in social hygiene and of normal courses for teachers and special workers; (3) the collection of propaganda material; (4) the formation of regional committees, and (5) the organization of a congress on social hygiene education.

BELGIUM

(From Our Regular Correspondent)

July 8, 1920.

Federation of International Medical Societies

M. Willems has called the attention of the Academy to the fact that Dr. F. F. Simpson of Pittsburgh recently spent several months in Europe with a view to interesting the medical profession of the world in the project conceived by American scholars of reorganizing on a uniform basis all international societies related to the various branches of medicine. It is proposed to create a federation of these societies and to establish an international medical press bureau which shall be charged with making known all important discoveries to the medical press of the world, thus assuring rapid diffusion of medical knowledge.

A committee of ten, composed of two physicians from each of five countries, Belgium, France, Great Britain, Italy and the United States, has been named and will meet immediately in Paris or London to set the new organization on foot.

Belgium, which already has many reasons for feeling devoted to America, cannot but greet with joy this new achievement of a great people. American genius has distinguished itself by a happy mixture of realism and idealism and it has wrought some remarkable solutions of the economic and scientific problems which mankind faces.

Memorial to Physicians Fallen in the War

The families and friends of physicians who fell on the field of honor gathered, June 10, for the unveiling of a monument commemorating the glorious sacrifice of the fallen heroes. The marble tablet bearing the name of each was placed in the hall of the military hospital of Brussels, and before a profoundly affected assembly, presided over by the minister of national defense, Dr. Wibin extolled the unselfishness of their heroism in impassioned and vibrant terms. To those who have gone, he expressed the deep gratitude of the youth of Belgium for the self-sacrifice which made victory possible.

Honors to Dr. Bainbridge

Dr. William Seaman Bainbridge of New York has just been nominated corresponding member of the Académie royale de Belgique. Besides his works on cancer, special attention is called to the excellent report on war surgery which he published after a trip to both sides of the front.

Venereal Prophylaxis

Although the venereal peril is increasing from day to day in almost all countries, it is impossible to give special attention to all the measures proposed for counteracting the evil. In Belgium, venereal diseases constitute a formidable endemic which the war has only increased. M. Bayet recently maintained before the Académie de médecine that all hope of

effective control through administrative measures should be abandoned. In order to be successful a campaign must be undertaken by the medical profession itself. The profession should have representation on the Conseil supérieur d'hygiène through the colleges and medical societies, it should recommend the candidates for appointment as dispensary directors, and should take an active part in the working of the dispensaries. The Conseil supérieur d'hygiène should be a sort of Conseil d'Etat, which should work out reforms and forward the recommendations to the administrative officers for detailed enforcement. In case of irreconcilable dispute, the question could be submitted to the public through mediation of the Académie de médecine.

The academy voted unanimously in favor of a resolution that the study of all questions of prophylaxis and social hygiene and of the necessary measures of execution should henceforth be confided to competent medical authority: the academy, Conseil supérieur, officers of the government and medical societies, and that the practical enforcement of these measures should be entrusted to the association and general collaboration of all practitioners.

MADRID

(From Our Regular Correspondent)

June 12, 1920.

Cajal and his New Institution

The government has established the Instituto Cajal. It is not an entirely new institution, but the bringing together of several laboratories which operated under the auspices of the Junta de Pensiones para el Extranjero (Foreign Fellowship Board). In fact, the laboratory for biologic investigations (created in 1900 with the Moscow international prize granted to Cajal) is now extended to include sections on general physiology, normal and pathologic histology, neurology, experimental pathology, etc. On the unanimous motion of the government, approved by the king, the new center of education will be named Instituto Cajal. Cajal, in order to devote all of his time to this institute, has resigned as director of the Instituto de Alfonso XIII, which is another state institution devoted to the combating of infectious diseases and the manufacture of biologic products. In connection with the creation of the new institute, there has been much talk of Cajal recently, general homage being rendered to his talents, his activities, and the many excellent qualities of this man, as talented as he is modest. Cajal is as well as ever, is preparing a splendid psychologic histology and exhibits his genius in all the copies of the journal of his laboratory for biologic investigations. Cajal, however, is prone to pessimism, which occasionally makes him believe, as about two years ago, that he suffered from cerebral arteriosclerosis. His words at the time were widely copied in the medical journals, but as a matter of fact and fortunately for science his wonderful brain is not involved at all and his neurons show no signs of senile degeneration.

Cajal's pessimism is always instructive and convinces any one who listens to his arguments. In Cajal's opinion, as he told me, war has its roots in the innermost part of the human soul. "From the cave man (as shown by the war scenes in Cagul's cave and other representations of the prehistoric man who lived more than a hundred thousand years ago) to the modern human being, all men have always considered collective looting and murder honorable and necessary, and have never been at a loss for reasons to explain their aggressions. How can it be hoped that man, who was always a wild beast, will change suddenly his customs and bloody instincts? When I hear that *Homo sapiens* will very soon decide peacefully his quarrels in accordance with the principles of law, I am as much amazed as if they told me that tigers will become some day harmless, herbivorous animals." Cajal takes very much to heart the sad spectacle presented by our politicians, and repeats Humboldt's phrase that the Spaniards lack political sense. In Cajal's opinion he should have added, "They are almost completely deprived of the instinct of preservation." Cajal, however, believes in the intellectual future of the race, but its disintegrated atomism, its wild individualism, handicap the patriotic impulses of the few statesmen we have in this country. Cajal advises a law according to which no politician could become a minister unless he had spent at least three years in Germany, France, England and the United States, learning the difficult science of governing free peoples. He would do likewise with the majors and colonels. "Do you believe," he asked me, "that we would have lost our colonies if the ministers, the generals and the admirals, besides knowing political geography, had spent compulsorily two or three years among the Yankees?"

The Medical Strike

The Spanish socialist party, nowadays evolutionizing toward syndicalism, has its headquarters at the well known Casa del Pueblo, where are planned virtually all the strikes that upset the economic life of this country. One of the institutions utilized by the Casa del Pueblo to influence the Madrid workingmen has been the Mutualidad Obrera, an economic and beneficial association, one of the chief assets of which is the medical service it offers its members. This Casa del Pueblo has in its turn been threatened with a strike by its own physicians, who dared to ask an increase in salary. This was refused to them. The physicians were amply justified in their request, as each of them is compelled to care for 300 families and receives a monthly fee of 50 centimos de peseta (10 cents) for each family; that is, 150 pesetas (about $30). The physicians at this time learned their lesson from labor, threatened to strike, and have obtained an increase of their fees to 275 pesetas (about $55).

BERLIN

(From Our Regular Correspondent)

June 28, 1920.

Socialization of Medical Practice

In order to avoid the evils of kassen practice, which are increased by the brutal demeanor of the officials in the guise of employers, there has lately been an increase in the number of those physicians who without being affiliated with the social democratic party are inclined to vote for so-called socialization of medical practice. This scheme for "state medicine" is part of the Erfurt program of the social democratic party, and under its provisions all medical and obstetric attendance and all medicines would be furnished free of direct charge. The whole notion of the workings of this scheme is shown in an article by Dr. Kollwitz of Berlin, in a recent number of the *Deutsche medizinische Wochenschrift*. "In the present transitional period, physicians are being asked to decide whether they wish to engage exclusively in private practice or place themselves at the disposal of the public service. In the latter event, they will not receive fees for individual services or a capitation allowance but a fixed salary. They will be obligated to remain in the public service for a stated number of years or until disabled. Their period of duty shall generally embrace a certain number of hours corresponding to the normal working day. The appointment entails in addition the grant of a disability pension and care of dependents. The post of duty will be determined by the preliminary training and residence of the physician, but transfers and changes will be prescribed, partly to prevent monotony and partly to furnish relief. Medical attendance will be given free to all. Members of the krankenkassen will

then no longer constitute a special category of patients, and division and tearing apart of the kassen system (from an economic and business point of view one of the most unsatisfactory works of the past) will be superfluous. Since society will furnish medical assistance to everybody, the krankenkassen will disappear entirely or they will function only as auxiliary relief societies. The ambulant sick will be treated in public consultation offices, the bedridden will be attended in their homes, and those suffering from serious illness or contagious diseases will be taken to hospitals. Consultation offices will be distributed, like the schools and postoffices, throughout the country, depending on the particular needs. Physicians will serve at these offices in monthly rotation, and an eight-hour day will be divided into three hours at the office and five hours on house visits or in public health work. General practitioners and specialists will be assigned to each office and their services will be available day and night. Division of duties within the offices will be made by a committee chosen from the interested physicians. The assignment of men to posts in the consultation offices, hospitals, sanatoriums, research laboratories and examination stations will be determined by a council of physicians and finally by the ministry of health." As may readily be conceived, the great majority of physicians recognize that these provisions will bring many disadvantages to physicians and patients alike, and will be in large measure impracticable. Because of a desire for professional freedom, physicians are opposing the socialization of medical practice, except those belonging to the social democratic party and a few fanatics for liberty.

At the meeting of physicians last year, a resolution opposing state domination of medical practice was adopted, in the interest of the patient, the physician and medical science, on the ground that a personal relation of confidence between physician and patient was unconditionally necessary. The consistent introduction of the policy of free selection of physicians, unrestricted by officialdom, in the whole kassen practice will assure most perfectly the fulfilment of the most comprehensive missions of medicine. Fortunately the national assembly rejected the proposal of an independent social democrat to socialize the practice of medicine and obstetrics and the manufacture and sale of drugs under control of the ministry of health. During the debate the minister of the interior declared that he considered socialization of medical practice as inexpedient. Meanwhile, as a result of the elections of June 6, the social democratic party is excluded from the government, and the danger of renewed attempts is temporarily averted.

Marriages

HUGH FRANCIS LENA, New London, Conn., to Miss Helen Frances Gartland of Dorchester, Boston, June 26.

WILLYS MERRITT MONROE, Guabita, Panama, to Miss Edith Marjorie Bates of Cristobal, Panama, July 22.

LAWRENCE KRAMER GUNDRUM, Fontanelle, Iowa, to Miss Ethel Henshaw Martin of St. Louis, June 12.

MAX SHAWEKER, New York, to Miss Mary Kathryn Keplinger of New Philadelphia, Ohio, June 14.

HERBERT MAXWELL NASH WYNNE, Minneapolis, to Miss Ethel Maxwell of Everett, Mass., June 1.

ALBERT ERNEST GALLANT, Forest Hill Gardens, L. I., to Mrs. Mary Claire Parsons, June 14.

ISOM ALFRED RANKIN, Morning Sun, Iowa, to Miss Dorothy Bemis of Bondurant, Iowa, June 18.

JAY CLEVELAND BYERS, Dorchester, Neb., to Miss Linda C. Snow of Alexandria, Va., June 22.

WALKER ELY SWIFT, to Miss Dorothea Valentine Abbott, both of New York, July 18.

EDGAR POE SANDROCK, to Miss Dorothea Gertrude Peters, both of Baltimore, July 22.

Deaths

Burton Jay Merrill ● Stillwater, Minn.; Bellevue Hospital Medical College, 1881; aged 64; coroner and county physician of Washington County, Minn., professor of materia medica and therapeutics from 1886 to 1888 in the St. Paul Medical College; physician to the State Prison since 1889; died, July 16, from heart disease.

Johann Franz Dolina, Dayton, Ohio; University of Königsberg, Germany, 1889; aged 60; a member of the Ohio State Medical Association; died in the Miami Valley Hospital, Dayton, July 12, from hemorrhage following razor wounds of the throat, presumably self-inflicted.

Elias Lester, Seneca Falls, N. Y.; College of Physicians and Surgeons in the City of New York, 1863; aged 86; assistant surgeon, U. S. Army, and brigade surgeon during the Civil War; the oldest member of the Seneca County Medical Society; died, July 18.

Truman P. French, Chicago; Indiana Medical College, Indianapolis, 1878; aged 69; a member of the Illinois State Medical Society; for many years a practitioner of Vermillion County, Ill.; died at the home of his son in Springfield, July 13.

Eli P. Edwards, Paris, Texas; Hospital College of Medicine, Louisville, 1881; aged 69; a member of the State Medical Association of Texas; who was operated on in the Sanitarium of Paris, July 1, died in that institution, July 4.

Hugh Sutherland Kinmouth, Asbury Park, N. J.; College of Physicians and Surgeons in the City of New York, 1870; aged 72; died near Delmar, N. J., July 21, from the effects of poison believed to have been self-administered.

Albert Shunk, Mansfield, Ohio; College of Physicians and Surgeons in the City of New York, 1886; aged 57; a member of the Ohio State Medical Association; died, July 14, from a gunshot wound of the head self-inflicted.

Felix Barrett, Westbrook, Me.; United States Medical College, New York, 1883; Medical School of Maine, Brunswick and Portland, 1893; aged 59; a member of the Maine Medical Association; died, April 27.

John Joseph Kenny, New York; Columbia University, College of Physicians and Surgeons, New York, 1915; aged 37; a member of the Medical Society of the State of New York; died in Roosevelt Hospital, July 24.

Victor Parsonnet ● Newark, N. J.; Long Island College Hospital, Brooklyn, 1898; aged 49; visiting gynecologist and president of the medical staff of the Beth Israel Hospital, Newark; died suddenly, July 20.

Frank Beebe ● Johnstown, N. Y.; Albany, N. Y., Medical College, 1881; aged 65; mayor of Johnstown from 1907 to 1909; died at the home of his daughter in Eau Claire, Wis., July 9, from pneumonia.

Edward Montrose Smith ● Bridgeport, Conn.; College of Physicians in the City of New York, 1882; aged 60; once president of the Bridgeport Medical Association; died, July 14, from pneumonia.

Tinsley V. Ware, Springfield, Mo. (license, Missouri State Board of Medical Examiners, 1883); aged 88; for many years a practitioner and druggist of Lebanon, Mo.; died, July 16.

Charles Frederick Hill, Newark, N. J.; Baltimore Medical College, 1908; aged 38; a member of the Medical Society of New Jersey; died in Pequannock, N. J., July 9, from tuberculosis.

Marie Geraldine Langdon, Englewood Cliffs, N. J., Baltimore University School of Medicine, 1904; Woman's Medical College of Pennsylvania, Philadelphia, 1905; aged 51; died, June 21.

Rozell McGlathery ● Conklin, Colo.; Tulane University, New Orleans, 1908; aged 37; died, July 14, from a gunshot wound believed to have been self-inflicted with suicidal intent.

Charles Oscar Cranston, Parsons, Kan.; Kansas City (Mo.) Medical College, 1894; aged 51; died in St. John's Hospital, Joplin, Mo., July 18, after a surgical operation.

● Indicates "Fellow" of the American Medical Association.

George Frederick Pitts, Warwick, N. Y.; University of the City of New York, 1877; aged 71; a member of the Medical Society of the State of New York; died, July 22.

Walter Samuel Mickler, Lee, Fla.; Southern Medical College, Atlanta, Ga., 1895; aged 47; died in a hospital in Greensboro, N. C., July 21, from gastric ulcer.

Abraham Huntsinger, Mishawaka, Ind.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1877; aged 81; died, June 30, from cerebral hemorrhage.

Christopher C. Rutherford, McDade, Texas; Tulane University, New Orleans, 1881; aged 81; died at the home of his son in Giddings, Texas, July 14.

Joseph Farley ● Philadelphia; Jefferson Medical College, 1886; aged 58; died at his summer home in Atlantic City, July 19, from cerebral hemorrhage.

Harry Chester Ewing, Colorado Springs, Colo.; University of Colorado, Boulder and Denver, 1911; aged 36; died, April 7, from pulmonary tuberculosis.

Harry E. Campbell, Pittsburgh; Jefferson Medical College, 1881; aged 60; died in a rooming house in New York, July 25, from cerebral hemorrhage.

Charles C. Williams, Pittsburgh; Cleveland University of Medicine and Surgery, 1894; aged 48; a veteran of the war with Spain; died, July 21.

Cornelius W. Cramer, Pentwater, Mich.; Hahnemann Medical College, Chicago, 1886; for forty-five years a practitioner; died, about July 12.

George Albertson Parker ● Southampton, Pa.; University of Pennsylvania, Philadelphia, 1875; aged 65; died, July 24, from heart disease.

Henderson Hines, Rago, Kan.; Cincinnati College of Medicine and Surgery, 1866; aged 89; died, July 15, from cirrhosis of the liver.

Horace L. Martin, Atlanta, Ga.; Medical College of Georgia, Augusta, 1893; aged 54; died at a sanitarium in Atlanta, July 2.

Cassius E. Belcher, Barnesboro, Pa.; Cincinnati College of Medicine and Surgery, 1877; aged 60; died, July 15, from nephritis.

Henry Adams Carr, Elmira, N. Y.; University of the City of New York, 1879; aged 77; died in Utica, N. Y., June 25.

John Irving Van Wert ● Patton, Pa.; Bellevue Hospital Medical College, 1887; aged 55; died in New York, July 25.

William T. Gaines, Nashville, Tenn.; University of Nashville, Tenn., 1882; died in an infirmary in Nashville, July 17.

Charles Turner Fisk, Portland, Me. (license, Maine State Board of Registration, Act of 1895); aged 71; died, June 11.

John M. Shutt, Fort Wayne, Ind. (license, Indiana State Board of Medical Examiners, 1897); aged 70; died, July 17.

William L. McNeill ● Port Arthur Texas; Kentucky School of Medicine, Louisville, 1897; aged 53; died, July 3.

Theodore Raymond Parker ● Willimantic, Conn.; University of the City of New York, 1880; aged 64; died, June 18.

Edwin Herbert Russell, Los Angeles, Calif.; Boston University, School of Medicine, 1880; aged 63; died, July 16.

Eva Harding, Topeka, Kan.; Hahnemann Medical College, Chicago, 1882; aged 62; died, July 27, from heart disease.

Israel Albert Loveland ● Keene, N. H.; Dartmouth Medical School, Hanover, N. H., 1875; aged 69; died, July 5.

William Jacobs, Washington, Kan.; American Medical College, Eclectic, St. Louis, 1876; aged 75; died, July 16.

William H. Crowley, Chicago; Rush Medical College, 1896; aged 53; died at his old home, Potsdam, N. Y., July 26.

Thomas Norman Pearson, Morrill, Me.; University of Vermont, Burlington, 1893; aged 55; died, May 28.

Virgil Thompson, New York; New York Homeopathic Medical College, New York, 1862; died, June 8.

Fred Bellinger Casey, Mohawk, N. Y.; Albany (N. Y.) Medical College, 1892; aged 53; died, July 19.

Charles Seraphin Rodier, Manchester, N. H.; Laval University, Montreal, 1887; aged 56; died, June 8.

George Levi Brown ● Buffalo; Harvard University Medical School, 1870; aged 72; died, about July 8.

Orville G. Hutchinson, Rochester, N. Y.; Eclectic Medical Institute, Cincinnati, 1891; died, July 9.

Correspondence

"CREDULITY AND CURES"

To the Editor:—Dr. Peterson's article on "Credulity and Cures" (THE JOURNAL, Dec. 6, 1919) appeals so cleverly to the credulity of the uninformed members of the profession that he is hereby requested to present to the medical profession an unprejudiced scientific discussion of the freudian psychology and the psychanalytic method of treating functional neuroses and psychoses, in order that his own interpretations and insight may be fully evaluated, without taking on faith that his personal standing as a psychiatrist and his personal acquaintanceship with Freud and Jung make it impossible for him to be wrong. His article is misleading physicians to take a prejudiced attitude toward the treatment of neuroses and psychoses without actually considering why, and this unintelligent resistance is preventing many neurotics and psychopaths from finding a solution for serious conflicts and suffering. Dr. Peterson's article is not truly assisting the physician to maintain the attitude that he pleads for in his conclusion, namely, that "we must try to take a middle path" which is "broad enough to know that there are great mysteries in our complex organisms and all the sciences that have to do with them, . . . and not be too prejudiced to weigh, ponder and examine."

He mentions a series of "faith" cures, radical surgical operations, wild drug cures and eccentric therapeutic methods that have had a more or less popular vogue, and, after doing incalculably more harm than good, have gone to limbo.

To this list however, in order to balance judgment and not make men perniciously skeptical, should be added some illustrations of the long, long series of successful clinical anatomic, bacteriologic and physiologic discoveries, surgical innovations, and therapeutic methods that were once derided and scorned by the suave old fathers of the medical profession.

He appeals to the *credulity* of the uninformed physician to accept that he is qualified to attack the work of Freud and Jung because he is personally acquainted with these men, has read some of their writings, knows other psychanalysts, and has seen their failures. I suppose it is fair politics to ask an uninformed stranger to accept that personal acquaintanceship is sufficient to make one an infallible critic and censor; but when Dr. Peterson has their faith in this personal relationship he violates it by making a few, brief, designing, dogmatic assertions which are entirely calculated to bring the theories, methods and discoveries of psychanalysis into disrepute without giving the reader the slightest opportunity to judge for himself and examine the errors of Freud and Jung and others. He attempts to disparage Freud's discovery of the influence of the wish on human behavior by a prejudiced sketch of how the influence of the wish on the mind of children was discovered. Would a reputable surgeon or chemist or psychologist use such methods of criticism of another's work?

This is hardly "trying to take a middle path." Dr. Peterson surely does not condemn vaccination because it was discovered from a cow. Neither would he condemn vaccination and favor laws for its repression because people have died or were mutilated following vaccination. Like Dercum, Peterson still struggles with the theories and methods which Freud advocated twenty years ago.

Is this doleful ignorance or bitter prejudice? Will they deny man the right of self-correction and self-improvement? Have they not changed their own views of psychiatry?

Dr. Peterson appeals to the credulity of the medical profession to disregard psychanalysis because it may take weeks, months or even years to treat a case. Are there not many

diseases, such as tuberculosis, diabetes, arteriosclerosis, nephritis and myocarditis, that require expensive treatment and a great outlay of time? Is the physician justified in condemning the use of a therapeutic method on these grounds? He also argues that it is dangerous, causing some to go insane (a very questionable assertion), others to commit suicide, others to get divorces, or become vile, etc. Is not surgical practice still burying its thousands, and medical practice its tens of thousands? What physician has not had to bury sad regrets with a patient? It is true that many patients are greatly distressed by the psychanalytic method and so do many patients suffer in order to be cured by other forms of treatment. Psychanalysis is not a child's play nor an old man's game. Like major surgery, it requires long training, great care and sound, experienced judgment.

In surgery and medicine, as in all methods of science and commerce, there will always be crude new methods, a margin of failures and fakers. Old methods will always be made to look damnable in the light of newer, while advocates of old conceptions will froth and fume at the work of "faddists," while the "cults" will ridicule the "fossils" and suave mossbacks, even though both may be practicing some excellent as well as ridiculous methods. Let us have fairness of criticism and maturity of judgment. Who knows what apparently absurd little discovery today will not completely revolutionize medical practice tomorrow? The discoveries of the insignificant little germ and tissue-cell overthrew all the dogmas of the old schools of anatomy, physiology, pathology and medical practice. So Freud's discovery that the individual has cravings of which he is unconscious (wishes which have a tremendous influence on his thoughts, behavior and health) is forcing the orthodox psychiatry and psychology of the passing decade into disuse.

Dr. Peterson suggests that if given sufficient encouragement he would advocate the passing of a law prohibiting the psychanalytic method of treating the neuroses and psychoses of young people. Why be intolerable of their sufferings from uncontrollable affective cravings? Why, like Abraham, slay the unhappy son for the glory of God? Why should they not have access to a method of treating maladaptations and fears that has cured hundreds of young men and women and helped them to know themselves? Is it necessary to hew out of mountains great granite slabs and erect in massive letters, so the whole world will be reminded every moment that the most important and most difficult thing in the world is "Know Thyself."

Through the psychanalytic method of studying the insane we have learned that the most potent cause of insanity is *repressed affective cravings;* and this repressive tendency is started early in childhood, not naturally or through the designs of Nature, but through the pernicious influence of prudish, purblind fathers and mothers, and dogmatic teachers who are obsessed with sexual phobias.

Dr. Peterson makes a claim that many psychanalytic case reports show little of the cases and much about the type of mind of the psychanalyst himself. This must be accepted. There will be quite a rush of untrained physicians to psychanalysis, after failing in other lines of work, who regard tentative guessing and questioning of patients as good practice. In every line of endeavor there are fakers and wolves, but—why be like the Prussian officer who destroyed Louvain because one of the citizens committed a crime? Why not "take the middle path" and recognize that we are able to judge much of a man's personality not only by what he writes (as "Credulity and Cures") but also by the manner of his dress, his signature, voice, step, smile, what he reads, the way he operates.

If Dr. Peterson will give us an unimpassioned, unprejudiced discussion of the new psychopathology and psychanalysis, making the fallacies of reasoning apparent by scientific data and logic, so that the medical profession may judge without having emotions appealed to in a manner that is designed to arouse a biased attitude, then his fairness to science and the affront on the credulity of the medical profession may be redeemed.

Dr. Peterson ridicules the importance which the "new psychology" places on the emotional value of symbols and dreams, and yet in his article he uses quite a few symbols to express what he *wishes* to say, as, for example, "our dreams . . . reflect in a moonlight kind of way the thinking processes of our day."

Ten years' experience with the Freudian psychology and the psychanalytic method in hospitals for mental diseases has demonstrated that psychanalysis has made momentous contributions to knowledge of the nature of man, and that the psychanalytic method is of the utmost value in the treatment of selected cases of nervous and mental diseases.

EDWARD J. KEMPF, M.D., Washington, D. C.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HYCLORITE — DICHLORAMIN-T — SURGICAL SOLUTION OF CHLORINATED SODA

To the Editor:—1. Please give me some information concerning Hyclorite, put out by the General Laboratories, Madison, Wis., as to its antiseptic value and stability. 2. Also concerning Abbott's dichloramine-T. Do these products contain the required amount of chlorin? 3. Also please give me information where I can obtain a chlorin gas to make Dakin's solution.

CHARLES T. STURGEON, M.D., Los Angeles.

ANSWER.—1. Hyclorite has been accepted for New and Nonofficial Remedies, and reference to the 1920 edition will give the requested information, with regard to the stability of this preparation. The description for this product explains that its actions and uses are those of solution of chlorinated soda U. S. P. A general article which precedes this and similar chlorin products contains valuable information about hypochlorites and hypochlorite substitutes.

2. Dichloramine-T Abbott is one of the several brands of Dichloramin-T which have been accepted for New and Nonofficial Remedies and which may be depended on to contain the required amount of chlorin.

3. New and Nonofficial Remedies describes Chlorine-Soda Ampoules marketed by Johnson and Johnson. These are composed of a sealed glass tube containing liquid chlorin and a tube containing sodium carbonate. Directions are furnished for preparing surgical solution of chlorinated soda (Dakin's solution).

LITERATURE ON LUNG ABSCESS FOLLOWING TONSILLECTOMY UNDER LOCAL ANESTHESIA AND UNDER GENERAL ANESTHESIA

To the Editor:—Will you inform me where I can find some information on the subject of lung abscess following tonsillectomy under local anesthesia, also under general anesthesia?

C. N. C., M.D., Washington, D. C.

ANSWER.—The following articles have appeared on this subject:

Simpson, J. R., and Noah, H. G.: Report of Two Cases of Lung Abscess Following Tonsillectomy Under Local Anesthesia in Tubercular Subjects, *Pennsylvania M. J.*, March, 1920.

Burger, H.: Lung Abscess after Tonsillectomy, *Nederlandsch, Tijdschr. v. Geneesk.*, Nov. 1, 1919; abstr., THE JOURNAL, Feb. 21, 1920, p. 570.

Carr, J. G.: Lung Abscess Following Tonsillectomy, *Med. Clin. N. Am.*, July, 1919.

Clendenning, Logan: Cause of Abscess of Lung after Tonsillectomy, THE JOURNAL, April 3, 1920, p. 941.

Walters, R. M.: Cause of Lung Abscess after Tonsillectomy, THE JOURNAL, April 17, 1920, p. 1116.

Wilkinson, Oscar: Cause of Abscess of Lung after Tonsillectomy, THE JOURNAL, April 24, 1920, p. 1183.

Flagg, P. J.: Cause of Abscess of Lung after Tonsillectomy, THE JOURNAL, April 24, 1920, p. 1183.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 7. Sec., Dr. Harry C. De Vighne, Juneau.
HAWAII: Honolulu, Sept. 6-10. Sec. Dr. R. W. Benz, 1141 Alakea St., Honolulu.
ILLINOIS: Chicago, Sept. 20-23. Director, Francis W. Shepardson, State House, Springfield.
IOWA: Des Moines, Sept. 15-17. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.
MASSACHUSETTS: Boston, Sept. 14-16. Sec., Dr. Walter P. Bowers, State House, Boston.
NEW HAMPSHIRE: Concord, Sept. 9-10. Sec., Dr. Charles Duncan, Concord.

Massachusetts May Examination

Dr. Walter P. Bowers, secretary, Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, May 11-13, 1920. The examination covered 13 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 21 candidates examined, 6 passed and 15, including 4 osteopaths, failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Boston University		(1919)	76.7
Middlesex College of Medicine and Surgery		(1919) 75.1, 75.1,	(1920) 77
Tufts Medical College		(1919)	77.7
Omaha Medical College		(1896)	75
	FAILED		
Chicago College of Medicine and Surgery		(1916)	68
Loyola University		(1919)	72.3
Indiana University School of Medicine		(1917)	69.4
State University of Iowa Coll. of Homeo. Med.		(1915)	63.8
Baltimore Medical College		(1902)	67.1
College of Physicians and Surgeons, Boston		(1920)	66.9
Middlesex Coll. of Med. and Surg. (1919) 67, 71.7, 72.7.			
Meharry Medical College		(1913)	73.3
Laval University		(1919)	68.6

New Mexico April Report

Dr. R. E. McBride, secretary, New Mexico State Board of Medical Examiners, reports that 5 candidates were licensed on diploma, and 1 candidate was licensed by reciprocity, at the meeting held at Santa Fe, April 11-12, 1920. The following colleges were represented:

College	LICENSED ON DIPLOMA	Year Grad.
George Washington University		(1918)
Northwestern University		(1909)
Kansas City Medical College		(1893), (1905)
Vanderbilt University		(1882)

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
St. Louis Univ. School of Med.		(1918)	Missouri

Oregon January Examination

Dr. Urling C. Coe, Oregon State Board of Medical Examiners, reports the written examination held at Portland, Jan. 6-8, 1920. The examination covered 16 subjects and included 92 questions. An average of 75 per cent. was required to pass. Of the 39 candidates examined, 22 passed and 17, including 5 osteopaths, failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
College of Medical Evangelists		(1918)	1
George Washington University		(1919)	1
Chicago College of Med. and Surgery		(1915), (1916)	2
College of Phys. and Surgs., Chicago		(1904)	1
Loyola University		(1917)	1
Northwestern University		(1906)	1
Rush Medical College		(1903), (1906), (1917)	3
Keokuk Medical College		(1895)	1
State University of Iowa, College of Medicine		(1903)	1
Johns Hopkins University		(1915)	1
Harvard University		(1893)	1
Washington University		(1911)	1
Bellevue Hospital Med. College		(1878)	1
University of Oregon		(1916), (1918), (1919, 3)	5
University of Vermont		(1889)	1
			Number Failed
Hahnemann Medical College, Chicago		(1896)	1
Northwestern University		(1910)	1
College of Physicians and Surgeons, Chicago		(1905)	1
University of Louisville		(1907), (1916)	2
Missouri Medical College		(1895)	1
University Medical College of Kansas City		(1912)	1
Eclectic Medical University, Kansas City		(1917)	1
St. Louis College of Physicians and Surgeons		(1918)	1
University of Pennsylvania		(1918)	1
University of Tennessee College of Medicine		(1913)	1
Nippon Special Medical School, Japan		(1910)	1

Book Notices

THE AMOEBAE LIVING IN MAN. A Zoological Monograph. By Clifford Dobell, M.A., F.R.S., Assistant Professor of Protistology and Cytology in the Department of Biology, Imperial College of Science and Technology, London. Cloth. Price, $3.75. Pp. 155. New York: William Wood & Company, 1919.

In this volume the author sums up his researches on amebas in man and the lower animals. He presents the subject more from the standpoint of comparative protozoology than from the medical point of view. He has worked over an immense amount of material—10,000 human stools and 150 kittens experimentally infected with *Endameba histolytica*, together with much special pathologic material from a variety of intestinal diseases observed chiefly during the war. He discusses at considerable length the several varieties of amebas found in man, and also those found in dogs and in monkeys. In the genus *Endameba* he includes three varieties: *E. histolytica*, *E. coli* and *E. gingivalis*. The first he considers the common cause of amebic dysentery, and the second a common nonpathogen of the intestinal canal. Regarding *E. gingivalis*, he says: "At present, therefore, there seems to be no good evidence to support the hypothesis that *E. gingivalis* attacks the tissues, that it is the cause of pyorrhea, or that it is in any way pathogenic." His manner of presenting a subject is not always concise. The presentation of data is frequently mingled with paragraphs of discussions of an argumentative nature which at times become tedious. Especially does the author criticize Schaudinn, stating that his conclusions regarding the intestinal amebas of man were mostly incorrect. But he approves of and uses Schaudinn's nomenclature of dysentery amebas (*E. histolytica*) and recommends Schaudinn's sublimate alcohol method as the "best fixative for cysts." He does not approve of the term "Craigia," believing that adequate evidence for the existence of this organism has not been presented. At the end there is an excellent bibliography, which is extensive but not "complete." There is also an index. After reading this monograph, one is conscious of at least three difficulties: confusion regarding identification, confusion regarding nomenclature and inadequate knowledge of the life histories of these organisms. Dr. Dobell deserves credit for at least some degree of progress along these lines.

DISEASES OF THE THROAT, NOSE AND EAR. For Practitioners and Students. By W. G. Porter, M.B., B.Sc. F.R.C.S. Third edition, revised under the Editorship of A. Logan Turner, M.D., F.R.C.S., Consulting Surgeon, Edinburgh Eye, Ear and Throat Infirmary. Cloth. Price, $4. Pp. 300, with 79 illustrations. New York: William Wood and Company, 1919.

This is a concisely written volume designed to furnish the practitioner and senior student a single volume embracing sufficient information on the subject to be of value in practice. With this end in view the author has wisely omitted anatomic description except in special instances. Instruments are not illustrated. Major operations are not described. The volume is chiefly devoted to symptomatology, diagnosis and treatment, so far as the latter can be carried out by the nonspecialist. This method has enabled the author to produce a valuable book for the general practitioner and student without sacrificing its worth for the sake of brevity. There are four sections devoted, respectively, to diseases of the pharynx, larynx, nose and ear. In each, methods of examination are described, followed by chapters discussing symptoms, diagnosis and treatment of the pathologic conditions ordinarily occurring in these parts. An appendix contains formulas used in the treatments described. The illustrations are good, and the publisher's work is praiseworthy.

Medicolegal

Privileged Communications and Waiver—Unethical Practice

(Bauch v. Schultz (N. Y.), 180, N. Y. Supp. 188)

The Supreme Court of New York, Trial Term, New York County, in denying the defendant's motion for a new trial after the plaintiff had obtained a verdict in this personal injury case, says that the court would not be performing its whole duty if it merely denied the motion, without commenting on certain unusual features presented at the trial. Immediately after the accident an ambulance was called by a policeman, and the plaintiff was taken to a hospital, where he received treatment at the hands of duly licensed physicians connected with that institution. On the trial he testified as to the happening of the accident, the extent of the injuries received, and as to his previous condition of health. He also called experts who testified as to the extent of his injuries. On the trial, without the plaintiff's having previously waived his privilege as required by Section 835 of the Code, the defendant called as witnesses the ambulance surgeon who first treated the plaintiff after the accident, and the two other physicians from whom the plaintiff received treatment while in the hospital, and each of these witnesses, after testifying to material facts learned by him in the treatment of the plaintiff, admitted on cross-examination that he had been employed previous to the trial by the defendant to testify as a medical expert for hire at the trial. Such an utter disregard of the ethics of the medical and legal professions cannot be passed by without serious condemnation by this court.

The relation of physician and patient is peculiarly confidential, and is safeguarded by the law in the interest of the patient, by forbidding disclosures by physicians of material and necessary facts the knowledge of which was gained in the treatment by the physician of his patient, without an express waiver on the part of the patient as provided in the statute. It is clear that the statute in forbidding disclosures by the physician did not intend to place a patient at the disadvantage before a jury of being compelled to object to testimony by his physician, thus manifesting a desire to conceal certain facts. The higher courts in one case have held that, where a plaintiff called two out of three physicians who examined the patient after the accident, the plaintiff must be deemed to have waived the protection of the statute, so as to permit the calling by the defendant of the other physician; also where the plaintiff introduced her physician's certificate as proof of loss that also constituted a waiver of the statute; but this court knows of no sufficient authority for the contention that the mere fact of the plaintiff's testifying to the injuries received and to his condition before the accident constituted a waiver of all the privileges of the statute as to physicians at any time employed by him relative to matters within the issues. Such a construction would practically nullify the statute and defeat its beneficient purpose, so that it would no longer be a shield for the patient.

But the physicians called as experts on this trial did not have the possible justification which would be furnished by such a construction of the statute in agreeing to testify as witnesses, and in accepting employment by the defendant as medical experts in an action brought by their former patient, no such waiver having been made when they accepted employment as experts by the defendant; nor did the case present any evidence of fraudulent claim on the part of the plaintiff such as might explain, though not justify, a disregard of the physician's obligation. The serious question presented for the consideration of the associations of the bar and the medical societies is whether such deliberate and flagrant disregard of the ethics of the medical and legal professions should go unchecked, or whether steps should be taken, by statutory amendment or otherwise, to prevent a recurrence of such incidents. The necessity of some action's being taken was shown by the suggestion of one of the medical experts that, as the plaintiff was a free patient in the hospital, he was not entitled to the protection of the statute. But one who, as a victim of misfortune, incapable of volition in the selection of a physician, is taken to a hospital, is in an exceptional degree entitled to the protection of the law.

The court does not find the defendant's attorney guilty of intentional wrongdoing in connection with the employment of experts, but rather laboring under a misconception of recent decisions, in supposing that they had practically rendered the statute inoperative in cases of this character.

Hospital Records and Conversations with Physicians

(Zipus v. United Railways & Electric Co. (Md.), 108 Atl. R. 884)

The Court of Appeals of Maryland says that in this action brought by a father to recover damages for personal injuries to one of his children a physician who was called as a witness offered in evidence the record of the case during the time that the child was undergoing treatment at a hospital. The record in question was not one which had been made by the witness, nor was he able to tell by whom it was made, whether a student or a physician in the hospital; he knew only that among the records in the hospital this particular one appeared, together with a large number of other records in the same volume. This fell short of the ruling thus far universally observed by this court as to the requirements for making such a record admissible in evidence.

Exception was also reserved during the testimony of the mother of the child, as to conversations had with various physicians who, at one time or another, were attending on the child. But no fault could be found with the action of the trial court in striking out this evidence. It was clearly hearsay evidence, and its relation to the ground of action set out in the declaration too remote to have been properly considered by the jury. The plaintiff contended for its admission as constituting a part of the res gestae or essential circumstances of the case. But some of the testimony in question was with regard to the statements made a year and a half or two years after the accident, and the rule of res gestae has never been so stretched in this state as to make testimony of this description admissible.

Entitled to Examine Notes of Physical Examination

(Richardson v. Nassau Electric R. Co. et al. (N. Y.), 180 N. Y. Supp. 109)

The Supreme Court of New York, Appellate Division, Second Department, holds that there was error, in this personal injury case, in the refusal of the trial justice to compel the plaintiff's medical expert to exhibit the notes made by him of his physical examination of the plaintiff. The court says that the witness was asked on cross-examination:

> By the way, you have notes there, haven't you? A. Notes of my examination. . . . Q. Did you refresh your recollection from the notes that you have there? A. I did, and hearing some of the case yesterday. Q. Do you mind letting me see those notes? A. I don't think I ought to let you see them. There are certain conclusions here.

The trial court ruled that the witness was not obliged to exhibit the notes to the defendant's counsel, and denied the defendant's request that he be allowed to see them, to which ruling the defendant excepted. But this court thinks that the defendant was entitled to examine the notes referred to.

Society Proceedings

COMING MEETINGS

Amer. Assn. of Electro-Therapy & Radiology, Atlantic City, Sept. 14-17
Amer. Assn. of Obstetricians and Gynecologists, Atlantic City, Sept. 20-22.
American Public Health Association, San Francisco, Sept. 13-17.
American Roentgen Ray Society, Minneapolis, Sept. 14-17.
Colorado State Medical Society, Glenwood Springs, Sept. 7-9.
Indiana State Medical Association, South Bend, Sept. 23-25.
Kentucky State Medical Association, Lexington, Sept. 27-30.
Minnesota State Medical Association, St. Paul, Sept. 29-30.
Missouri Valley, Medical Society of the, Omaha, Neb., Sept. 6-7.
Utah State Medical Association, Ogden, Sept. 7-8.
Washington State Medical Association, Tacoma, Sept. 16-17.
Wisconsin, State Medical Society of, La Crosse, Sept. 8-10.
Wyoming State Medical Society, Cheyenne, Aug. 9-10.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

July, 1920, **20**, No. 1

Case of Malignant Thymoma. N. C. Foot, Boston.—p. 1.
*Precipitins For Egg Albumin in Stools. C. G. Grulee, Chicago.—p. 15.
*Hemorrhagic Tendency as Frequent Cause of Cranial Hemorrhage of New-Born. J. A. Foote, Washington, D. C.—p. 18.
*Active Immunization against Diphtheria in a Large Child Caring Institution. J. Blum, New York.—p. 22.
Eye in Hereditary Syphilis. J. Green, Jr., St. Louis.—p. 29.
Review of Literature of Syphilis in Infancy and Childhood. P. C. Jeans, St. Louis.—p. 55.

Precipitins for Egg Albumin in Stools.—It would seem from the results of Grulee's experiments that egg albumin is in nearly every instance completely broken down by the digestive processes in infants and children. This holds good not only for children and older infants, but also where the egg albumin is used in small quantities for the new-born as well. There is only one other possibility, and that is that the egg albumin instead of being broken down in the process of digestion is absorbed unchanged.

Intracranial Hemorrhage and Hemorrhagic Tendency.—The tendency toward hemorrhage in the new-born, Foote says, is frequently first manifested as intracranial hemorrhage, and it is important to recognize that this may be and often is a local manifestation of a general condition. The early use of lumbar puncture and the hypodermic administration of substances that tend to increase blood coagulability are rationally indicated in every case of suspected intracranial hemorrhage of the new-born, even prior to operation. The suggestion is made that blood coagulation tests be performed as a routine of the new-born infant.

Active Immunisation Against Diphtheria.—Schick tests made on 1,076 children in an institution during a period of five years show that a negative reaction is evidence of the presence of sufficient antitoxin in the tissues to protect the individual against diphtheria infection. Tests made on seventy-two families showed that the younger members of the same family usually gave corresponding reactions to the Schick test. Where variations did occur, the younger member gave usually the positive and the older the negative reaction. Infants under 6 months, because of the transmitted immunity of the mother, were exceptions to this rule. Changes in the Schick reaction from negative to positive during the first three years of life, due to loss of an inherited immunity, were found to be sufficiently numerous to justify retesting during this period at intervals of a few months. This procedure is especially desirable in infant asylums. The full duration of the active immunity conferred on individuals susceptible to diphtheria by the injection of toxin-antitoxin is not yet ascertained. In one series of cases the immunity persisted in 100 per cent. of the group of fifty children for at least twenty-two months. Workers in research laboratories have found that the immunity once acquired lasts for at least four and one-half years. Blum claims that it is possible to render a child-caring institution diphtheria free. This has been accomplished for a period of five years in one institution by injecting all susceptibles with toxin-antitoxin mixtures.

Archives of Dermatology and Syphilology, Chicago

July, 1920, **2**, No. 1

Lichen Nitidus: Report of Case. R. L. Sutton, Kansas City, Mo.—p. 1.
*Melanotic Tumor of Lip Treated with Radium. D. W. Montgomery and G. D. Culver, San Francisco.—p. 5.
*Frambesia Tropica (Yaws). H. Goodman, New York.—p. 7.
Multiple Benign Cystic Epithelioma Associated with Xeroderma Pigmentosum. S. A. Withers and W. G. Coleman, St. Louis.—p. 27.
Onychauxis due to Hypopituitarism. L. Hollander, Pittsburgh.—p. 35.
*Intraspinal Treatment in Neurosyphilis. J. H. Mitchell, Chicago.—p. 44.
*Unusual Manifestations of Syphilis. N. L. Linneman, Duluth.—p. 50.
*Treatment of Syphilis. W. H. Guy, Pittsburgh.—p. 53.
*Acidosis in Skin Diseases. S. E. Sweitzer and H. E. Michelson, Minneapolis.—p. 61.

Radium Treatment of Melanotic Tumor.—It has been strongly advised not to employ either radium or roentgen rays in the treatment of melanotic tumors. In the case cited by Montgomery and Culver, the alternatives would have been either to allow the affection to pursue its own course, or to perform an extensive and deforming operation. After due consideration, it was determined to employ radium, and fortunately, the case turned out well.

Frambesia Tropica.—The results of a study of the literature with personal observations are presented by Goodman. He does not regard frambesia as being a modified form of syphilis. An extensive bibliography is appended.

Intraspinal Therapy of Neurosyphilis.—In Mitchell's opinion the Swift-Ellis intraspinal method of treatment of syphilis of the central nervous system is superior to intensive intravenous treatment alone. The method is perfectly safe when care is exercised in technic and in the proper selection of cases, and should be resorted to in all cases in which the patient fails to respond to intravenous medication.

Unusual Cases of Syphilis.—A case of gumma of the bladder and one of urticarial syphilid are reported by Linnemann.

Treatment of Syphilis.—Guy prefers to exhaust intensive general medication before resorting to intraspinal therapy.

Acidosis in Skin Diseases.—No marked or consistent change was found by Sweitzer and Michelson in the alkali reserve in psoriasis, acne vulgaris, eczema and seborrheic dermatitis. Therefore, they concluded that promiscuous alkali therapy is unscientific and inadvisable, and may produce a condition of alkalinosis which may be dangerous to the patient.

Boston Medical and Surgical Journal

July 22, 1920, **183**, No. 4

Diagnosis of Accessory Sinus Disease Causing Loss of Vision. L. E. White, Boston.—p. 93.
Ready-to-Wear Braces for Strained Muscles and Ligaments. H. W. Marshall, Boston.—p. 98.
Motion Study of Inoculating Tubes. M. M. Canavan, Boston.—p. 103.
Specific Aortitis. W. D. Reid, Boston.—p. 105.
Hemostatic Forceps for Postoperative Tonsillectomy. F. Kingsley, Boston.—p. 112.

Delaware State Medical Journal, Wilmington

April, May, June, 1920, **11**, No. 2

Diseases of Bile Ducts and Gallbladder. I. J. MacCollum, Wyoming.—p. 2.
Physicians' Fees. C. A. Buswell, Chicago.—p. 13.
Compulsory Health Insurance. G. Frothingham, Detroit.—p. 19.

Journal of Infectious Diseases, Chicago

July, 1920, **27**, No. 1

Nature of Bacteria. H. Bergstrand, Stockholm.—p. 1.
*Effects of Roentgenization and Splenectomy on Antibody Production. L. Hektoen, Chicago.—p. 23.
Dysentery and Allied Bacilli. M. Levine, Washington, D. C.—p. 31.
Protection Afforded to Red Cells Against Hemolysis by Fosin. C. L. A. Schmidt and G. F. Norman, Berkeley, Calif.—p. 40.
*Irregular Typhoid Strains and Infections Caused by Them. K. F. Meyer and N. M. Neilson, San Francisco.—p. 46.
*Hemophilic, Anaerogenic Paracolon Bacillus Found in Case of Infected Bilateral Hydronephrosis. K. F. Meyer and F. Hinman, San Francisco.—p. 72.
Opsonic Reactivation of Antipneumococcus Serum. J. Meyer, Chicago.—p. 82.
Toxin for Leukocytes Produced by Streptococci (Streptoleukocidin). Y. Nakayama, Chicago.—p. 86.

Effect of Splenectomy on Antibody Production.—The results recorded by Hektoen show that splenectomy may diminish the output of antibodies, especially when practiced about the same time the antigen is injected. In the rabbit, however, splenectomy under certain conditions may have little or no effect on antibody production, as after a single large dose of sheep blood. On the other hand, even when made several weeks before injection of human blood, removal of the spleen seemed to interfere with the formation of precipitin, but further observations are needed to determine whether such selective effect occurs regularly under these circumstances. On the whole, the effects of splenectomy at

or near the time of injection of antigen appear variable and uncertain, more so, perhaps, than might be expected from the demonstrations that antibodies appear earlier in the spleen than in the blood, that antigen is fixed by the spleen, and that in the presence of antigenic substances cultures of splenic tissue outside the body may produce antibodies. The results of several experiments indicate clearly that after antibody production is well under way, splenectomy has little or no effect on the course of the antibodies in the blood. The antibody content of the blood was not diminished markedly by splenectomy and roentgenization at or near the height of the curve. The nature of this so-called resistance remains obscure.

Irregular Typhoid Strains.—Meyer and Neilson describe the laboratory infections in a vaccinated caretaker exposed to laboratory animals shedding living typhoid bacilli and a laboratory worker also immunized, who was regularly working with strains of the *B. typhosus* group. The last case apparently caused a severe and fatal house contact infection. From the blood and urine of two persons, an irregular, atypical organism, and from the stool and urine of a third typical typhoid bacilli were isolated. The possible bearing of these observations on the epidemiology, clinical aspect and bacteriology of typhoid fever is discussed, and it is suggested that special attention be paid to the occurrence and the detailed study of irregular typhoid strains in the typhoid vaccinated.

Hemophilic Nonaerogenic Paracolon Bacillus.—A bacillus isolated from the urine of a case of bilateral infected hydronephrosis is described by Meyer and Hinman. The bacillus is apparently a member of the paracolon group of bacteria found in urine and is best designated as hemophilic nonaerogenic paracolon. Samples of urine cultured after the patient had been vaccinated with a heat killed, tricresolized bacterial suspension of the original parasitic strain and after a clinical recrudescence, demonstrated the same organism which grew on nonhemoglobin mediums and which in every respect corresponded with the saprophytic strains obtained by successive cultivation on artificial mediums.

Journal of Medical Research, Boston

March, 1920, **41**, No. 3

*Skin Lesion in Measles. F. B. Mallory and E. M. Medlar, Boston.—p. 327.
*Type Cell of So-Called Dural Endothelioma. F. B. Mallory, Boston.—p. 349.
*Regeneration of Smooth Muscle Cells. F. B. Berry, Boston.—p. 365.
*Experimental Production of Pneumonia with Influenza Bacillus of Pfeiffer. R. H. Major, Rosedale, Kan.—p. 373.

Skin Lesions in Measles.—The skin lesions in measles are, without much question, of infectious origin and due to the causal agent of the disease. The reasons for these points of view are as follows: The lesions are focal in character and discrete, not uniformly distributed like the rash in scarlet fever. They are scattered irregularly, sometimes singly, often in smaller and larger groups. If numerous enough, they may become confluent. Small pieces of skin removed during life from thirty-five patients were studied by the authors and the findings are described in detail. The endothelial cells lining the capillaries in the earliest lesions often contain from one to four, rarely more, minute intensely staining spherical bodies which vary a little in size. In the older lesions the bodies are fewer in number and usually more evident at the periphery of the lesion. Still later they disappear entirely. The nature of these bodies cannot be determined. Similar bodies have not been found in the endothelial cells lining the blood vessels in other acute lesions examined for purposes of control. It is suggested that they may be the causal agent; possibly a coccus in various stages of digestion. Their positive reaction to the Gram stain would favor this view. Study of the nasal, pharyngeal, laryngeal and conjunctival secretions, and of the blood in smear preparations, by dark field illumination and by culture on various media, failed to show any micro-organisms which seemed to bear any etiologic relation to the disease.

Dural Endothelioma is a Fibroblastoma.—The result of an examination of perfectly typical specimen of a so-called dural endothelioma leads Mallory to suggest that the dural endothelioma, so called, is in reality some form of fibroblastoma. The phosphotungstic acid hematoxylin stain showed the real nature of the neoplasm. Each cell was surrounded by numerous fine fibroglia fibrils, without question produced by the tumor cells. They were better developed in those places where growth was less rapid, but they were everywhere present and were more prominent than the collagen fibrils. The production of fibroglia and collagen fibrils is the distinguishing characteristic of the type cell known as the fibroblast. The histogenesis of the tumor is discussed.

Regeneration of Smooth Muscle.—The material for Berry's study was a uterus, into the wall of which a curet had been thrust four days previously. Unquestionable regeneration of the smooth muscle was noted. Experimental studies made on animals gave the same results. Berry considers it doubtful if the condition seen in hypertrophic stenosis of the stomach and in Hirschsprung's disease can be ascribed entirely to simple hypertrophy. It would appear, rather, that there must also be some hyperplasia, though in what manner is not clear.

Bacillus Influenzae and Pneumonia.—The results of Major's experiments indicate that the invasive powers of *B. influenzae* are limited. When the organisms are injected intravenously the effects produced are to be explained by a toxic action, rather than any direct bacterial action produced by multiplication and spread through the blood stream. In no cases were the bacilli recovered from the blood cultures in animals which had been injected intravenously with influenza bacilli. Introduction of *B. influenzae* into the trachea was successful, in producing bronchopneumonia. In these cases also, the invasive properties of the organisms were apparently limited, as the bronchopneumonic patches were small, few in number and confined to the hilus of the lungs. The location of these areas also suggested a local direct action of the masses of bacteria, with but little extension to other portions of the lungs. A preliminary irritation of the respiratory tract with chlorin gas permitted an extensive invasion with influenza bacilli injected intravenously or intratracheally. The pathologic changes produced in the lungs were striking and intense in degree, and resembled the lungs in fatal cases of human influenza. In the majority of these cases influenza bacilli were grown from the lungs in pure culture.

Medical Record, New York

July 17, 1920, **98**, No. 3

Tonsil Infections. S. R. Salzman, Toledo, O.—p. 85.
Obesity. H. C. Clapp, Boston.—p. 89.
*Bacteriologic Study of Respiratory Infections and Respiratory Contacts as Encountered in France. H. R. Spencer, Baltimore.—p. 94.
*Treatment of Acute Polyarthritis. S. W. Boorstein. New York.—p. 96.
Value of Immunizing Doses Influenza Vaccine in Prophylaxis and Specific Treatment of Influenza. W. E. Fitch, New York.—p. 100.
*Blood in Influenza. B. Lemchen, Chicago.—p. 102.
Cancer of Omentum. J. N. Study, Cambridge City, Ind.—p. 103.

Pathology and Bacteriology of Pneumonia.—Of the fatal cases (seventy-five) of pneumonia studied by Spencer postmortem, 91.9 per cent. were bronchopneumonias. The lesions were most frequently bilateral, and involvement was most often noted in all of the lobes of both lungs. Of the lobes involved, the lesions were commonly found in the dependent portions. Pleurisy was the most common complication being noted in 72 per cent. of cases. The pneumococcus *Staphylococcus aureus, Streptococcus hemolyticus* and Pfeiffer's bacillus were most frequently noted. While in both the fatal cases of pneumonia and in the contacts, Type IV pneumococcus predominated, the more virulent Types I, II and III were noted more frequently in the pneumonia cases than in the contacts. The number of carriers among the contacts was high, and, as might be expected, the incidence of carriers in the medical wards was greater than in the surgical ward. Pfeiffer's bacillus was encountered as often among the carriers as in the fatal cases of pneumonia.

Medical Treatment of Acute Polyarthritis.—In the medical treatment of acute polyarthritis, or what has been termed arthritis deformans, Boorstein urges that all forms of salicylates, even acetylsalicylic acid, should be avoided. They upset

the digestion and make the condition worse. Only those medicaments aimed to promote digestion, proper bowel activity, proper circulation, and proper character of the blood should be used. It is, therefore, advisable to give strychnin, arsenic, iron preparations, and phosphates. The laxative desired can easily be added to these. In chronic cases, cod liver oil can be added. During the acute or subacute stage, hypodermic injections of sodium cacodylate, given every four or five days in from ¾ to 1¼ grain doses, have been found of great help in raising the resistance power. Tincture of gelsemium, 5 minims, may be used to relieve temporary severe pain. If intestinal putrefaction is present, Boorstein uses guaiacol carbonate, 5 grains three times daily. None of the lithium or radium waters, glandular extracts and vaccines were found to have any value.

Blood in Influenza.—Leukopenia, great diminution of blood platelets, with an increase of the coagulability of the blood were the notable findings made by Lemchen in his series of cases.

Minnesota Medicine, St. Paul

July, 1920, 3, No. 7

Treatment of Second Stage of Labor; Prevention of Injury to Child and to Pelvic Floor. J. B. DeLee, Chicago.—p. 317.
Surgical Treatment of Bunions. C. H. Mayo, Rochester, Minn.—p. 326.
Tumors of Great Omentum. A. L. McDonald, Duluth.—p. 331.
War Wounds of Major Joints. A. A. Law, Minneapolis.—p. 337.
Modified Inguinal Hernia Technic. G. Earl, St. Paul.—p. 342.
Surgical Shock. S. C. Plummer, Chicago.—p. 345.

New Jersey Medical Society Journal, Orange

July, 1920, 17, No. 7

The Doctor. G. K. Dickinson, Jersey City.—p. 217.
The State Journal. H. Taylor, Fort Worth, Texas.—p. 221.
Gallbladder Disease. J. W. Martindale, Camden.—p. 226.
Errors in Gynecologic Diagnosis and Practice. F. C. Holden, New York.—p. 229.
Diagnosing Incipient Pulmonary Tuberculosis. C. I. Silk, Perth Amboy.—p. 231.
Good Fellowship. J. M. Rector, Jersey City.—p. 233.
*Primary Sarcoma of Appendix. H. I. Goldstein, Camden.—p. 234.

Primary Sarcoma of Appendix.—Goldstein's patient, female, aged 25 years, had several attacks of appendicitis. The appendix was eventually removed. In its wall was a mass which proved to be a lymphosarcoma. Goldstein claims that only sixteen cases of primary sarcoma of the appendix are recorded in the entire literature of the world. All the cases showed symptoms resembling attacks of acute or recurrent appendicitis.

New Orleans Medical and Surgical Journal

July, 1920, 73, No. 1

Prevalence of Carriers of Endamoeba Dysenteriae among Soldiers Returned from Overseas Service. C. A. Kofoid and O. Swezy, San Francisco.—p. 4.
Trachoma in Louisiana. T. J. Dimitry, New Orleans.—p. 11.
Parenteral Injections of Cow's Milk. A. Darier, New Orleans.—p. 16.
American Society of Tropical Medicine. H. J. Nichols, U. S. Army.—p. 29.
Leprosarium of Cabras, Porto Rico. J. A. Diaz, New Orleans.—p. 33.

New York Medical Journal

July 24, 1920, 112, No. 4

Effort to Standardize Surgical Mensuration. R. T. Taylor, Baltimore.—p. 109.
Diagnostic Tests in Hay Fever and Asthma. W. Scheppegrell, New Orleans.—p. 112.
Cases of Protein Sensitization. M. A. Ramirez, New York.—p. 115.
Peptic Ulcer. J. S. Diamond, New York.—p. 116.
*Benzyl Benzoate Treatment of Whooping Cough. T. E. McMurray, Wilkinsburg, Pa.—p. 122.
Diagnostic Charts as Guide in Study of Gastro-Intestinal Conditions. I. O. Palefski, New York.—p. 123.
Pleural Disease in Infants and Children. H. Lowenburg, Philadelphia.—p. 124.
Treatment of Tuberculosis. B. S. Paschall, New York.—p. 127.

Benzyl Benzoate in Whooping Cough.—Benzyl benzoate, in doses of from 5 to 30 minims every four hours, depending on results, was used by McMurray to good purpose. In some cases decided improvement was noticed from the smaller dose; in other cases larger doses were employed. In almost every instance the treatment determined subsidence of the paroxysms. The effect usually made itself felt within forty-eight hours and in one instance there was relief after the second dose. As a rule, the relief is immediate and complete. No undesirable results were noted. A child 12 months of age was given 20 minims with no evidence of gastric or any other disturbance.

Ohio State Medical Journal, Columbus, Ohio

July 1, 1920, 16, No. 7

Dietetics of Nephritis. S. R. Salzman, Toledo.—p. 485.
Problem of Acidosis in Relation to Disease. W. W. Beauchamp, Lima.—p. 488.
*Infections of Uterus and Cervix; Treatment. F. I. Shroyer, Dayton.—p. 495.
Gonorrheal Inflammations in Women. E. H. Chapin, Columbus.—p. 498.
Simple Goiter, a Public Health Problem. C. P. McCord and R. C. Walker, Cincinnati.—p. 501.
*Pulmonary Tuberculosis as Sequel of Influenza. S. A. Douglass and W. P. Brown, Mt. Vernon.—p. 506.
Medical Economics. J. A. Duncan, Toledo.—p. 510.
*Effect of Ether on Experimental Tubercle Bacillus Infections. J. B. Rogers, Cincinnati.—p. 509.
Epidemic of Influenza at Delaware Girls' Industrial Home. G. H. Transeau, Columbus.—p. 512.
Syphilis and Feeblemindedness in Alabama State Industrial Schools. T. H. Haines, Jackson, Miss., and W. D. Partlow, Tuscaloosa, Ala.—p. 515.

Infections of Uterus and Cervix.—Shroyer claims that 60 per cent. of all married women and 30 per cent. of all unmarried women have infections of the genital tract. These infections are almost invariably located in the cervical endometrium. The endometrium of the body of the uterus is practically immune to infection. Lacerations of the cervix seldom produce uterine or pelvic symptoms. It is the presence of infection in the lacerations that causes disease. Among the more frequent germs that cause chronic endocervicitis are the gonococcus, the streptococcus, the staphylococcus and the colon bacillus. Infection of the cervix in nulliparous women is frequent, although it is not at all limited to those who have had sexual intercourse nor are these infections always due to the gonococcus, but the mentioned bacteria any one or several may be the causative factor. Properly directed surgical interference offers, at present the only method of cure. The cervical mucosa must be completely enucleated, care being taken not to destroy the muscle, for if the muscle is destroyed during future pregnancies the function of the canal will be lacking.

Influenza and Tuberculosis.—The records of the Ohio State Sanatorium show that epidemic influenza has had a decided etiologic relation to tuberculosis. Forty per cent. of 615 tuberculous patients admitted to the sanatorium since 1919, attributed their active tuberculosis symptoms to influenza. Of the 249 patients, 67 per cent. had a negative tuberculous history prior to the epidemic of October-December, 1918, as far as could be determined, while in 33 per cent. (or 13 per cent. of total admissions) classified as reactivated, a definite or suspicious history of a previous tuberculosis could be elicited. Sixty-two per cent. of the entire group had positive tuberculous sputum. A feature of the activated cases was that 40 per cent. had a nonsymptomatic period averaging five months following influenza, during which, in many instances, the patient returned to work. The tendency in these cases was toward a delay in diagnosis by ascribing the tuberculous symptoms to bronchitic sequel of influenza and therefore supposedly benign and temporary. Douglass and Brown state that these statistics are also quite uniform for the Missouri State Sanatorium and the North Carolina State Sanatorium. The Ohio State Sanatorium, with a patient population of 185 was entirely free from influenza during both epidemics. During the 1918 epidemic no regulations were in effect. It is, perhaps, reasonable to suppose that these "open" cases have a considerable immunity to the associated organisms of influenza, also it is just as reasonable to presume that the open-air-hygienic regimen was a considerable factor in their protection.

Effect of Ether on Experimental Tuberculosis.—Experiments made by Rogers on guinea-pigs showed that ether anesthesia in tuberculously infected guinea-pigs fails to exert any inhibitory action on the progress of the tubercle formation or to prolong the life of the animal. It does not reduce the resistance of tuberculously infected guinea-pigs.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

July 3, 1920, **2**, No. 3105

*Universities in Medical Research and Practice. T. C. Allbutt.—p. 1.
*Place of Preliminary Science in Medical Curriculum. G. Newman.—p. 8.
Course of Study in Science for Medical Students: Biology. S. J. Hickson.—p. 12.
Id. Anatomy. A. Keith.—p. 15.
Id. Physics. E. Rutherford.p. 16.
Id. Relation of Preliminary Science Teaching to Pathology. J. L. Smith.—p. 17.
Id. Chemistry. A. Smithells.—p. 19.

Universities in Medical Research.—In his presidential address before the British Medical Association Allbutt states that the universities, ancient and modern, from Alexandria to Edinburgh, have made the professions. Universities have fostered research, and maintained standards. For each student the university stands for something larger than the field of a particular calling, for a more comprehensive design. Narrow "specialization" is found in medicine, as in other arts, among people of narrow culture. Specializing is prone to be quackish. Education must therefore from the first be an introduction to life; not forgetting that some study is a part of life. In medicine, Allbutt says, the "curriculum" may well be called a race! The enlargement of knowledge and means implies more and more instruction; but the limits of the human mind are not indefinitely extensible. Some easement may be had however by simplifying our studies; by teaching our teachers; by recognizing two curriculums—one of the diploma and another of the university; by postponing some studies till after graduation. The diploma course must play up to outside examiners. Speaking of teachers Allbutt says that almost none of them has been taught to teach; and but few are in a position to compare the methods of others with their own. Short revision or "rubbing up" courses at subsequent dates; as, for instance, of physics and chemistry in the pathology period are advocated. The theses and acts for M.B. and M.D. at Cambridge are held to be invaluable to the young graduate. The debt of other sciences to medicine, research, comparative pathology, psychotherapy, general practice and preventive medicine and clinical practice are subjects which are also discussed by Allbutt.

Needed Reforms in Medical Education.—The main reforms needed in the medical curriculum in Newman's opinion are four: 1. A lightening of the curriculum at both ends; in other words, fuller preparation in science before entrance to the medical school, and a postponement of instruction in certain specialities and in general practice to the postgraduate period in order to provide continued education of the qualified man—teaching which requires organization on the basis of professoriate, hospital, laboratory and clinical experience. 2. A fuller study of the sciences preliminary to medicine and a nearer application of these subjects to clinical work. Above all, there is great need of biology (anatomy and physiology). Its principles are the answer to many of our questionings. It is the fundamental theme. 3. Development of clinical teaching of university standard, particularly in relation to the beginnings of disease (the child and the outpatient), the science of prevention, the closed integration of various forms of clinical practice and of clinical with intermediate study, concentration on the protean diseases of tuberculosis, venereal, malaria, malignant disease, and an understanding of the social side of therapeutics (environment, diet, occupation, and the use of physical agents), as well as the social aspects of disease. 4. There is need of further state aid, though with a minimum of state control. To provide a satisfactory medical education (*a*) we need more teachers, better teachers, and better paid teachers; (*b*) we need clinical units; (*c*) we need improved laboratory accommodation and better equipment; (*d*) we also need an extension of hospital and clinic facilities for teaching. The education of the medical man is no longer a proprietary or merely professional interest. It is of national concern—for the health of the people is the principal asset of the state.

China Medical Journal, Shanghai

May, 1920, **34**, No. 3

Thrombo-Angiitis Obliterans in China. G. D. Whyter.—p. 219.
Uniform System of Eye Tests. H. J. Howard.—p. 226.
Fractures of Femur: Diagnosis and Treatment. J. C. McCracker.—p. 230.
Tuberculosis: Present Status of Tuberculin Treatment. W. H. Venable.—p. 236.
*Asiatic Cholera: Study of One Hundred Cases. L. H. Braafladt.—p. 243.
Cholera in Paotingfu, 1919. J. H. Wylie.—p. 252.
Cholera in Soochow, 1919. J. A. Snell.—p. 253.
Abscess of Liver. A. I. Ludlow.—p. 258.
*Exstrophy of Bladder: Implantation of Ureters into Rectum. A. J. Ludlow.—p. 262.
Gangosa in South China: Report of Two Cases. N. Bercovitz.—p. 263.
Influenza Bacillus in Paranasal Sinus Infections. S. J. Crowe and W. S. T. Neville.—p. 264.
*Nutritive Value of Soy Bean Products. W. H. Adolph and P. C. Kiang.—p. 268.

Asiatic Cholera.—On the basis of Braafladt's study, it would seem that (1) persons over 50 years of age contracting cholera have only a very small chance of recovering, even though they receive treatment; (2) that cholera is a more severe disease in women than in men; (3) that the prognosis is very good if proper treatment is commenced during the first day of the illness; (4) that hypertonic salt solution is the best form of treatment for those in severe collapse, but that it is harmful to those who have not yet developed many of the secondary symptoms; (5) that kaolin is the remedy of choice if the patient does not come under treatment too late.

Exstrophy of Bladder; Implanting Ureters Into Rectum.—A boy, aged 10 years, had a congenital exstrophy of the bladder. The anterior wall of the bladder was absent. Both ureters could be seen. Each ureter, together with a rosette of mucous membrane, was stripped back for a distance of 2 inches. The remainder of the bladder was dissected away. The peritoneal cavity was not opened during the procedure. Forceps were inserted into the rectum and on being passed through the rectal wall the ends of the ureters were seized and implanted into the two separate openings. The day following the operation there was leakage from above. The patient suffered considerable shock and died on the ninth day after operation.

Soy Bean.—The history and uses of the soy bean and its products in China are reviewed by Adolph and Kiang and the important relationship indicated which these food products bear to the Chinese dietary. Soy bean curd is rich in protein, and contains those mineral constituents which are essential for growth. Analyses are given of bean curd, bean milk, and the by-products obtained in their manufacture.

Indian Medical Gazette, Calcutta

June, 1920, **55**, No. 6

Standard Diets. J. A. Shorten.—p. 201.
Typhus and Typhus-Like Fevers in Birjand, East Persia. A. S. Fry.—p. 204.
Outbreak of Relapsing Fever in Turkey in 1918. C. Newcomb.—p. 208.
Influenza. J. H. McDonald.—p. 217.
Improvised Triple-Bladed Bamboo Gastro-Enterostomy Clamps. K. Hysain.—p. 219.
*Epithelioma of Upper Lip in Boy of Fourteen. L. P. Stephen.—p. 220.
Case of Cystic Kidney. A. Viswalingam.—p. 220.

Epithelioma of Lip in a Young Boy.—In Stephen's case the tumor was first noticed when the boy was 12 years old. It was removed by operation and a recurrence took place three months after. On admission to the hospital, in February, 1920, the tumor involved the right upper lip, extended beyond the middle line to the left and involved also the right angle of the mouth and a part of the lower lip. On the right cheek adjacent to the principal tumor were several secondary nodules, which were raised and warty in appearance, but were not ulcerating. The submaxillary and submental glands on both sides were enlarged and hard, but were not adherent to the jaw. The microscopic diagnosis was epithelioma.

Journal of Tropical Medicine and Hygiene, London

July 1, 1920, **23**, No. 13

Treatment of Bilharziasis with Antimony. J. E. R. McDonagh.—p. 165.
Bilharziasis: Sterilization of Ova During Course of Cure by Antimony (Tartarate). J. B. Christopherson.—p. 165.

Lancet, London

July 10, 1920, 2, No. 5054

*Relation of Preliminary Science Teaching to Pathology. J. L. Smith.—p. 55.
Medical Experiences in Macedonia and Caucasus. A. G. Phear.—p. 56.
*Physical Element in Psychoneuroses. J. S. Bury.—p. 66.
*Influence of Suggestion on Body Temperature. J. A. Hadeld.—p. 68.
*Suggestions for Mass Treatment of Hookworm Infection. S. T. Darling.—p. 69.
*Two Cases of Paralysis Agitans Occurring Before Thirtieth Year. E. D. Atkinson and C. W. Drought.—p. 72.
*Central Pneumonia in a Child of Two. H. O. Gunewardene.—p. 73.

Shortcomings of Medical Curriculum.—Smith holds that the present curriculum is wasteful of the students' time because it gives what may be called a general introduction to the sciences, but leaves it to the later teachers or the students themselves to apply the principles and methods of these sciences in the various branches of medicine; whereas a continuity of teaching would concentrate intellectual effort and would thereby attain with much more certainty the standard of work which the curriculum is designed to reach. Furthermore, the student of medicine should be trained in criticism, and for this all important part of his training the earlier sciences must assume a considerable part of the responsibility. To be a good practitioner of medicine requires that the doctor must possess not only technical knowledge and skill, but also a broad, sympathetic, tolerant conception of life. To secure this nothing could be better than critical reflection on the fundamental conceptions by which the phenomena of life are interpreted.

Psychoneurosis.—Bury regards it as likely that molecular disturbances of the nervous system and altered blood states largely account for the long duration of many cases of psychoneurosis and for the great tendency for symptoms to relapse on the slightest provocation, whether that be undue exertion, loud sudden noises, or family or business anxieties. In the most common type of cases he believes that better results will be attained by fresh air, sunlight, cheerful surroundings, and light work, than by continuous searching for a hidden mental conflict.

Influence of Suggestion on Body Temperature.—Hadfield cites a case in which there was a very remarkable susceptibility on the part of the patient to suggestions of heat and cold, which was not purely subjective, but produced a rise and fall of temperature as measured by the thermometer.

Treatment of Hookworm Infection.—The work of the Malaya board is reviewed by Darling. It is recommended that communities in which the adults have an average of fifty or less worms do not urgently require treatment, while those with more than fifty worms should be treated. In carrying out treatment the two-treatment plan may be pursued, microscopists being dispensed with. Every person in the group, excepting very young children, should be treated. Persons ill with chronic nervous diseases may be treated with thymol or other vermicide. Pregnancy and severe anemia are not contraindications to the administration of chenopodium. The drug and dosage is chenopodium 1.5 c.c., given in single or broken doses in hard gelatin capsules. The preliminary purge before medication may be omitted, but in this case the evening meal should be light and food then interdicted until after the postvermicidal purge, which may be given two to three hours after the exhibition of the chenopodium. The postvermicidal purgation should be very thorough, for it is extremely important that the chenopodium, being a neurotoxic drug with cumulative powers, should be as thoroughly expelled as the worms, and at the earliest possible moment after the drug has accomplished its purpose on the worms. If permanent results are to be achieved, prophylaxis as well as treatment of infection must be considered.

Paralysis Agitans Before Thirty.—The cases cited by Atkinson and Drought are of interest not only on account of the unusually early age (30) but because both patients were soldiers, in whom true paralysis agitans is very rarely seen.

Central Pneumonia in Child.—The unusual features of Gunewardene's case are: (1) that the crisis did not occur till the fourteenth day; (2) that the pneumonia was of the central variety and the physical signs of consolidation did not appear till the ninth day; and (3) that the temperature was maintained at two levels during the course of the illness for about nine days between 103.5 and 104.5 F. and for five days between 102 and 103 F., the fall to the lower range suggests the crisis following the inflammation of the area of lung primarily involved, masked by the fever due to the subsequent involvement of another area; there is also apparent the so-called precritical rise before the arrested crisis. The real crisis was a protracted one.

Annales de Médecine, Paris

1920, 7, No. 4

*Primary Typhoid or Paratyphoid Phlebitis. G. Etienne.—p. 249.
Nosography of Human Sero-Anaphylaxis. Péhu and Durand.—p. 255.
Phlebitis with Pulmonary Tuberculosis. Halbron and Paraf.—p. 265.
*Elimination of Hippuric Acid. P. L. Violle.—p. 272.
*Rôle of Fats in Nutrition. F. Maignon.—p. 280.
Present Status of the Abderhalden Reaction. Vitry.—p. 301.

Primary Typhoid Phlebitis.—In the first of Etienne's three cases, pain in the ankle was the first positive symptom after eight days of a slightly febrile temperature. Phlebitis developed and at the sixth day the paratyphoid A bacillus was cultivated from the blood. The phlebitis involved the femoral vein on both sides in turn, the temperature showing waves of acute rises. By the third month the blood was sterile but there was still some effusion in one knee six months after the first symptoms. In the second case the phlebitis developed the third day after the sudden onset of intense headache and malaise. The phlebitis assumed the form of phlegmasia alba dolens and involved both legs. The subacute disease progressed with the picture of general septicemia with sero-agglutination of typhoid bacilli but no signs of actual typhoid fever, the man of 56 dying in a little less than a month after the first symptoms. In the third case the phlebitis was the first sign of pathologic conditions. Then the temperature rose and the phlebitis spread to the other leg, with subjaundice, the low fever dropping by lysis the third month. The serum agglutinated the typhoid bacillus at 1:80 and the paratyphoid bacilli at 1:40 and 1:30. Etienne does not know of any analogous cases on record.

Elimination of Hippuric Acid.—Violle shows that the amount of hippuric acid eliminated varies with the diet and the state of the kidneys. When the latter are diseased, very little hippuric acid is eliminated, hence systematic examination of the hippuric acid output from time to time, on a given diet, including green vegetables and fruits to supply the benzoic acid from which the hippuric acid is formed, affords insight into the functional capacity of the latter.

Rôle of Fats in Nutrition.—Maignon shows how new facts recently learned have thrown light on the fats as potent modifiers of nutrition, in addition to their rôle as food. His personal research has apparently demonstrated that fats do not serve in the production of glycogen in mammals; hence their usefulness in diabetes. But they aid in the utilization of the proteins in the food, reducing the toxicity and increasing the nutritional value. The practical lesson from this is that fats are needed medicinally in all disturbances of nitrogen metabolism and to aid the protein synthesis in growing children. He explains the reasons why, with menace of coma in diabetes, the rational treatment is to give fats in the place of most of the carbohydrates of the diet; the protein in the diet should be reduced to the maintenance minimum. The fats should be in an assimilable form, such as emulsified and partially saponified oil. With this treatment, none of his diabetic patients have developed coma, although some of them were very grave cases of lean diabetes with intense glycosuria and acetonuria, and extreme nitrogen denutrition. The same treatment applies also to chronic autointoxication from defective utilization of proteins, as in eczema and rheumatismal conditions. He has obtained positive results in some dogs with eczema. Two conditions are indispensable, he reiterates, namely, that the fats must be given not as a supplement but in place of other foods, so that the organism will be obliged to utilize them and not store them up as adipose tissue reserves. This can be kept under control by repeated weighing. The other condition is that the urine must be kept acid with sodium bicarbonate to avert hyperacidity of the urine and hypoalkalinity of the blood, to which he ascribes the cause of acetonuria and acidosis.

Bulletin de l'Académie de Médecine, Paris

June 1, 1920, 83, No. 22

*Convulsions Cured by Operations. P. Bazy.—p. 501.
Potassii Tartroboras in Epilepsy. P. Marie and others.—p. 504.
Reduction of Contagious Period by Milne Method. G. H. Lemoine and Favre.—p. 515.

Tendency to Convulsions Arrested by Operation.—Bazy reports two cases in which an operation for undescended testicle, with attacks of pain and convulsions, put an end to the pains and convulsions, and there has been no recurrence during the one and fifteen years since. In another case an operation for appendicitis arrested recurring convulsions. The connection here was evidently indirect, as also in a case in which gastro-intestinal disturbances in a young man were cured by a change from an excessive meat to a more vegetable diet, and there were no more of the convulsions to which he had been subject.

Bulletin Médical, Paris

April 21, 1920, 34, No. 22

Restoration of Function After Concussion of Spinal Cord. A. Barbé.—p. 372.
Tuberculosis in the Gassed. F. Dumarest.—p. 374.

June 5, 1920, 34, No. 29

Secondary Endocarditis with Heart Disease. P. Ribierre.—p. 513.

June 12, 1920, 34, No 30

Centers for Infant Welfare Work. H. Méry.—p. 531.
*Treatment of Jaundice. P. E. Weil.—p. 533.
Gastro-Intestinal Disturbance in Children of Rhinopharyngeal Origin. A. Malherbe.—p. 535.

Sugar and Hexamethylenamin in Jaundice.—Weil gives systematically daily by the drop method, by the rectum, 1.5 gm. of hexamethylenamin in a solution of sugar, 45 gm. to 1 liter of boiled water, in all kinds of acute infections except dysentery. He applies it as a daily routine measure from the start. All that we know, he says, of liver physiology supports this treatment theoretically, and experience is confirming it in practice. Sometimes he adds a little epinephrin. This treatment is more active than infusion by the vein or subcutaneously of the sugar solution. It stimulates the liver and kidneys and induces intense diuresis, while the sugar promotes production of glycogen and elimination of nitrogenous waste, and starts a more profuse flow of bile. He uses sugar instead of glucose, as more readily available, and is not certain whether the hexamethylenamin might not be dispensed with. This treatment may transform conditions with jaundice from gallstones so that operative measures may become unnecessary. It fails of course when the jaundice is the result of cirrhosis or neoplasms.

Bulletins de la Société Médicale des Hôpitaux, Paris

May 28, 1920, 43, No. 19

*Spirochaeta Pallida in Aortic Aneurysms. Y. Manouélian.—p. 742.
Multiple Relapses of Diphtheric Sore Throat. L. Boidin.—p. 747.
Deafmute Androgynoid. Laignel-Lavastine and Gouriou.—p. 749.
Heredosyphilitic Gynandroid. Laignel-Lavastine and Boutet.—p. 754.
Lethargic Encephalitis. Dupouy.—p. 759.
Spirochaeta Pallida in Semen. M. Pinard and Hoch.—p. 762.

Spirochetes in Aneurysm of the Aorta.—Manouélian found *Spirochaeta pallida* in three or four cases of aneurysm of the thoracic or abdominal aorta. The spirochetes seemed to be clustered in foci.

Journal de Chirurgie, Paris

February, 1920, 15, No. 6

Muscle Flaps to Fill up Bone Cavities. R. Grégoire.—p. 593.
Tendon Plastics for Radial Paralysis. R. Massart.—p. 601.
Access to Foreign Bodies at Base of Brain and in the Sphenomaxillary Fossa. Bellin and Vernet.—p. 616.
Extraction Through Appendix of Pin in Cecum. L. Prat.—p. 624.

Journal de Médecine de Bordeaux

June 10, 1920, 91, No. 11

Protection of Infants Against Alcohol. Chambrelent.—p. 287.
Nontoxicity of Bismuth Subnitrate. L. Barthe.—p. 293.
*Access to Sella Turcica. Lafite-Dupont and Charbonnel.—p. 294.

Access to Sella Turcica.—This illustrated article discusses the topographical relations between the sella turcica and the sphenoidal sinus. There is wide variation in different cases but one point seems to be established, namely, that the sella is always on the median line in relation to the transverse axis of the skull. Its position in relation to the anterior-posterior axis of the skull may vary.

Journal d'Urologie, Paris

1920, 9, No. 1

*Indications for and against Nephrectomy. F. Legueu.—p. 1.
*Chronic Disease of Seminal Vesicles. G. Marion.—p. 11.
The Oscillometer as Aid in Urologic Surgery. G. Jeanneney.—p. 19.
New Case of Spontaneous Rupture of Renal Artery. Saint-Cène.—p. 25.
*Paresis of Bladder Cured by Borated Glycerin. Corbineau.—p. 31.

Indications for and Against Nephrectomy.—Legueu relates that thirteen of his 1,008 nephrectomies before 1920 are too recent for decision as to the outcome. Of the 437 others since 1915, in 250 the nephrectomy was done on the findings with catheterization of the ureters, and in 187 on the findings of the Ambard ureosecretory index. With the latter below 0.100, the mortality was 3.6 per cent.; above 0.100, the mortality was 10 per cent. With catheterization alone, the mortality was 3.20 per cent. His experience all speaks in favor of the Ambard index as being a reliable guide alone, especially when it is below 0.100. The higher the constant the greater the risk. The risk is highest when the nephrectomized kidney has been doing part of the work. When the remaining kidney has been doing all the work, the removal of the useless kidney does not affect the total output. With a constant below 0.100 the disease was invariably restricted to one side in his experience. But the constant does not tell which side; for this, catheterization may be necessary unless the diseased kidney can be located otherwise.

Vesiculitis with Prostate Disease.—In Marion's three cases the dysuria of prostatic origin was accompanied by inflammatory processes in the seminal vesicles, and in each case the prostate was the seat of a cancer. In one, the prostate seemed to be merely smoothly enlarged except that the seminal vesicles could be palpated, tender and doughy. This should suggest the possibility of malignant disease unless there is evidence of ordinary chronic prostatitis. The vesicles in each case were knobby and dilated as if the outlet to their secretions had been blocked by the neoplasm. They were the source probably of the violent pains experienced, and the removal of the vesicles with the prostate did not seem to render the prognosis graver.

Borated Glycerin in Paresis of the Bladder.—Corbineau reports two cases which sustain the general impression that boric acid has a stimulating action on the muscle fibers of the bladder. He injected it without first emptying the bladder, injecting 30 c.c. directly into the meatus without a catheter. This small amount was enough in both cases for the patient to regain functional control of the bladder in fifteen or thirty minutes. He used a 10 per cent. solution of the boric acid.

Lyon Médical

April 25, 1920, 129, No. 8

*Vaginal Cystocele. H. Violet.—p. 341.
*Nephritis After Pneumonia. A. Giuliani.—p. 347.
War Dyspepsia of War Prisoners in Germany. A. Mollière.—p. 374.

Vaginal Cystocele.—Violet relates that the outcome six to ten years after his operation for prolapse of the bladder has been perfect to date in his twenty cases. Through a median incision in the roof of the vagina, the bladder and muscles are loosened up and pushed back and the uterus—which is usually dragged down also by the cystocele—is freed. He then sutures the fascia together to make a solid floor for the bladder, taking the first stitch in the uterus isthmus. Four stitches are usually enough. His patients were mostly elderly women; others he tided along with pessaries and encouragement until they were old enough for the operation to be advisable.

Bilateral Acute Nephritis After Pneumonia.—Giuliani reports the prompt recovery of a young man after decapsulation of both kidneys, the seat of multiple miliary abscesses developing after a week of pneumonia.

Médecine, Paris

June, 1920, 1, No. 9

*Recent Acquisitions in Electroradiology. A. Zimmern.—p. 517.
High Frequency Currents in Therapeutics. D'Arsonval.—p. 526.
The Condenser to Simplify Electrodiagnosis. Cluzet.—p. 529.
*Roentgen-Ray Treatment of Pituitary Tumors. A. Béclère.—p. 533.
Orthodiagraphic Control of Aortitis. Vaquez and Bordet.—p. 536.
Curetting plus Roentgen-Ray for Skin Epitheliomas. J. Belot.—p. 540.
*Roentgen-Ray Treatment of Exophthalmic Goiter. P. Cottenot.—p. 542.
Radium Therapy of Cancer of Uterine Cervix. S. Fabre.—p. 546.
*Carbon Dioxid Snow in Skin Disease. L. Lortat-Jacob.—p. 552.

Recent Acquisitions in Electroradiology.—Zimmern cites with approval Rénon's appeal for roentgen-ray examination twice a year of persons with disease of the respiratory apparatus, to follow the evolution of their disease by keeping a radiologic record. He says that Rist's assertion that a normal lung gives a normal roentgen-ray picture has been proved too absolute by experiences with tubercle bacilli in the sputum when the roentgen-ray picture was quite normal. Mantoux has also demonstrated that a necrosed scrap of lung may not cast any shadow. Zimmern himself regards as of real value only the positive signs. The pneumoperitoneum represents progress; he ascribes the priority to Killing in 1902, and says that to date no mishaps have been reported with it. He adds "The Americans introduced into France during the war high tension apparatus to use with the Coolidge tube as in industrial electricity. Schearer in 1917 had pointed out the possible dangers from this, and the death of the Paris radiologist, Dr. Jaugeas, sadly confirmed the justness of his warning. The Société de Radiologie médicale de France has now taken up the question of means for protecting the radiologist and the subject against the high tension circuit, and numerous methods have been proposed. But there is only one that is absolutely effectual. That is, to have all the high tension apparatus in a cage on the ground, the opening of the cage automatically breaking the circuit."

Roentgen-Ray Treatment of Pituitary Tumors.—Béclère insists that in the constantly widening sphere of radiotherapy, the treatment of pituitary tumors with the roentgen rays is one of the most valuable acquisitions. With it he has succeeded in curing the headache, vertigo, nausea and vomiting; vision is improved more the earlier the treatment is begun, and the changes in the bones are arrested. These results have persisted for over six years to date; in one case for eleven years. One girl of 16 with exaggerated growth, obesity, and genital infantilism, with enlargement of the sella turcica and signs of intracranial pressure and impairment of vision was so improved by the roentgen-ray exposures that the obesity subsided, and ovarian functioning and the secondary sexual characters developed normally thereafter. He exposes different fields on the skull, not through the mouth.

Roentgen-Ray Treatment of Exophthalmic Goiter.—Cottenot says that since he has been using large doses, with thick filters, he has been obtaining very fine results in the typical cases with the complete set of symptoms. The nervous and heart symptoms are those which show the greatest improvement, the tremor subsiding, with the restlessness. The goiter itself and the exophthalmos are modified least and last. The functional disturbances thus are improved or cured, but the objective are more tenacious.

Carbon Dioxid Snow in Treatment of Skin Diseases.—Lortat-Jacob reviews the experiences in different countries with this cryotherapy or cryocauterization as he calls it, showing its success in many forms of dermatoses, its absolute harmlessness, and its efficacy in many cases refractory to all other measures.

Paris Médical

June 5, 1920, 10, No. 23

*Infectious Diseases in 1920. C. Dopter.—p. 449.
Clinical Diagnosis of Typhus. J. Rieux.—p. 461.
The Influenza Virus. R. Dujarric de la Rivière.—p. 466.
Atypical Bacilli in Bacillary Dysentery. J. Dumas.—p. 470.
*Spinal Fluid in Lethargic Encephalitis. R. Bénard.—p. 474.

Infectious Diseases in 1920.—Dopter reviews the field of infectious diseases describing the most important acquisitions gained during the last five years. Among them is the practice of injecting meningococcus antiserum directly into the ventricle at the first suspicion of ependymitis. Sicard and his co-workers have even rinsed out the meningeal cavities by a kind of spine-ventricle lavage. Boidin, Florand and Méry have each reported excellent results from bacteriotherapy, associated or not with an abscess of fixation, in cases refractory to serotherapy, as also Colard, Sergent and Bordet with microbian injections by the vein. He says of the agglutination of *Proteus X* in typhus, that every normal serum contains traces of agglutinins for *Proteus*, but the serum of typhus patients contains something that reenforces the normal agglutinins and thus ensures the typical reaction. It occurs only in typhus, although the proteus certainly has nothing to do with the causation of typhus. Serotherapy of iceterohemorrhagic spirochetosis has given most encouraging results in the hands of Martin and Pettit; when given in the first days of the disease it may arrest it. Dopter relates that Levaditi and Harvier have apparently established by the identical histologic lesions induced in rabbits by inoculation of an emulsion of brain substance from human cases of epidemic encephalitis, that the virus is filtrable, cannot be cultivated on ordinary mediums, and is essentially different from the virus of poliomyelitis, and is not neutralized by convalescents' serum. In conclusion he refers to Noguchi's *Leptospira icteroides* as one of the finest bacteriologic discoveries of our epoch if his statements are confirmed. In spite of the flood of literature on influenza, no new acquisition can be cited.

The Spinal Fluid in Epidemic Encephalitis.—Bénard remarks that although the cerebrospinal fluid may be absolutely normal, yet this seems to be the exception in the last few months of the present epidemic. Lymphocytosis is common, but the fluid is always clear; there may or may not be albumin and glucose is not constant but the latter is so frequent that a glucose content of from 0.67 to 1.06 gm. is a material aid in the diagnosis. The urea content is normal, unless there is uremia. No specific biologic reaction has been discovered yet.

Presse Médicale, Paris

June 12, 1920, 28, No. 39

*Voluntary Apnea Test. L. Binet and M. Bourgeois.—p. 381.
*Fasting Stomach Content. L. Pron.—p. 381.
Degeneration of Lenticular Nucleus. P. L. Marie.—p. 384.

Voluntary Apnea Test.—Binet and Bourgeois recalls that the functional reserves of heart, kidney and lungs can be estimated by the length of time a person can hold his breath after a deep inspiration. Two myxedematous patients were able to hold their breath for 90 and 110 seconds; with chronic bronchitis and pulmonary emphysema the apnea could be kept up only for 21 seconds; with pulmonary tuberculosis, even those with slight lesions, the average was 14 seconds; with well compensated heart disease, 34 seconds, and with failing compensation, 19. The latter figure was also the average with kidney disease, uremia and high blood pressure. The findings with this test do not parallel those of the vital capacity but throw light on the degree of impairment of respiratory functioning.

Fasting Stomach Content.—A previous communication from Pron on this subject was reviewed June 19, 1920, p. 1745. He argues to prove the greater diagnostic value of investigating the stomach content fasting rather than after a test meal. With the latter, a pure mucous catarrh escapes detection, as also microretention; filtering yields an incomplete content; the tint of the chyme masks any pathologic tint, and the slow or rapid rate of gastric secretion may mislead as to the total secretion when examined an hour after the test meal. In short, he declares, cancer is the only pathologic condition in the stomach in which the diagnosis is aided by analysis after the test meal, and even with this we must not forget that achlorhydria may be encountered sometimes, even in the elderly, with nonmalignant conditions.

On the other hand, analysis of the fasting stomach content differentiates frank dyspepsia from dyspepsia secondary to liver disease, by the pure bile in the stomach. With an ulcer, the test meal findings are merely those of ordinary hyperchlorhydria, while the finding, fasting, of a moderate total and hydrochloric acidity (for example, 2 gm. and 0.6 gm.) is highly instructive, and becomes certainty if the Meunier pro-

cedure is applied. After extraction of the stomach content and obtaining a negative Adler reaction, he pours through the stomach tube 200 c.c. of a 1 per cent. solution of acetic acid. Waiting for a few seconds, then aspirating it and testing for the hematin crystals which are constantly present on every ulcerating surface, clinches the diagnosis of gastric ulcer. The fasting stomach content also reveals continuous hypersecretion when the clinical findings otherwise may suggest merely hyperchlorhydria or possibly—from the delayed evacuation, dilatation and atony of the stomach—hypochlorhydria. It may also clear up the diagnosis of some serious stomach condition when there are no decided symptoms but only a bad general condition, lassitude and vague stomach malaise. In one man who weighed 44 kg. and ate at will and had never had vomiting nor pain nor heartburn, the fasting splash, hypersecretion and positive Adler test first revealed the old ulcer.

Progrès Médical, Paris

May 22, 1920, **35**, No. 21

Symptoms with Wounds of Cauda Equina. A. Barbé.—p. 225.
Accidental Amenorrhea. M. Dalché.—p. 227.
Physical Training in Connection with Courses of Mineral Waters. P. Mathieu.—p. 229.
Bismuth in Therapeutics. G. Faroy.—p. 229.
*Perforation of Lung with Pneumothorax. H. Lux.—p. 231.

Spontaneous Perforation of Lung with Induced Pneumothorax.—Lux comments on the comparative frequency of spontaneous perforation of the lung in the course of induced pneumothorax, and the usual effusion which follows it. He reports a case of the kind with prompt subsidence of the symptoms which had never been alarming at any time. The course depends on whether the perforation occurs in comparatively sound tissue; when this is the case little harm results.

Revue Franç. de Gynécologie et d'Obstét., Paris

January, 1920, **15**, No. 1

The Lower Segment of the Gravid and Parturient Uterus and Its "Contracture." L. Demelin.—p. 1.
Colloid Ovarian Cyst; Two Cases. R. Karhausen.—p. 29.
When Should Parturients Get Up? J. Vanverts.—p. 35.

February, 1920, **15**, No. 2

*Trachelopexy for Grave Genital Prolapse. A. Delassus.—p. 49.
*Sterility of the Male. F. A. Delnea and V. Widakowich.—p. 62.
Case of Hysteric Amenorrhea. D. Christidès.—p. 68.

Grave Genital Prolapse.—Delassus gives an illustrated description of the method of fastening the cervix stump, after amputation of the uterus, to the abdominal rectus muscle—a technic which he has applied in fifty cases. He prefers to supplement it with colpopexy at the same sitting. Apart from a case of pneumonia and one of tetanus there was only one death in his fifty cases. In one case he found later that the cervix stump had stretched from 3 to 12 cm., but there was no further tendency to prolapse.

Sterility of Male Origin.—This article reports the microscopic examination of the sperm of 100 men selected at random at Buenos Aires. In 10 per cent. the semen did not contain spermatozoa. All in this group had had gonorrhea at some time.

Policlinico, Rome

June 7-14, 1920, **27**, No. 23-24

*Medical Treatment of Amebic Liver Abscess. T. Pontano.—p. 607. Concluded.
*Lymphosarcomatosis. C. Zoli.—p. 615.

Efficacy of Emetin Treatment of Amebic Liver Abscess.—Pontano argues that what Rogers calls the presuppuration stage of amebic liver disease—during which alone, the latter says, medical measures are effectual—is in reality the stage of the established abscess. Hence it follows that medical measures are effectual at any stage, and Pontano's experience in ten cases has demonstrated this to be a fact. Not one of his ten patients has had any recurrence during the year or more since to date of writing. In eight of the cases the diagnosis was confirmed by exploratory puncture. He adds that the ameba may not be found in the stools or puncture fluid, but the microscopic aspect of the latter is sufficient to diagnose the abscess by the albumin, cell detritus, scanty degenerated cells, erythrocytes, fat droplets and crystals of fatty acids, even without true pus. Emetin injected intramuscularly, from 0.09 to 0.15 gm. daily for three days, is the rule; two courses the first month, then one course a month for eight or nine months. He gives a mild purge before each course, and sometimes gives a decoction of ipecacuanha by the rectum. The dysentery may flare up at first; this should not modify the treatment, but the pulse and respiration must be supervised, stopping the drug on signs of intolerance. It arrests the necrotic process, and the contents of the abscess are gradually resorbed. He warns, however, that if secondary infection is transforming the products of the abscess to true pus, surgical measures are indispensable. But otherwise, neither the gravity of the abscess, its size or its age contraindicates exclusive medical emetin treatment. This acts on the dysentery itself and on multiple abscesses. Amebic abscess of the liver belongs to medical therapeutics as much as syphilitic disease of the liver.

Lymphosarcomatosis.—Zoli calls attention to the fact that the primary lesion in the case reported was in the inguinal glands, and the malignant disease might have been exterminated if the groin focus had been excised in time.

Riforma Medica, Naples

May 1, 1920, **36**, No. 18

Lethargic Encephalitis. A. Gasbarrini and A. Da Gradi.—p. 421.
Roentgen Findings with Incipient Pulmonary Tuberculosis. C. Guarini. —p. 423.
Paroxysmal Hemoglobinuria. G. Molinari.—p. 432.

May 8, 1920, **36**, No. 19

Vaccine Therapy in Influenza. A. Gasbarrini.—p. 441.
Cerebrospinal Fluid in Lethargic Encephalitis. P. Boveri.—p. 444.
Duodenal Ulcer from Lead Poisoning. R. Cassanello.—p. 445.
Technic for Draining Suppurations. D. Taddei.—p. 447.

May 15, 1920, **36**, No. 20

Anhidrosis with Spinal Cord Disease. G. A. Pari.—p. 462.
Diplococcus Isolated in Case of Lethargic Encephalitis. Tron.—p. 465.
Fibrous Bronchiolitis. D. de Conciliis.—p. 466.
The Blood Pressure. G. Galeotti.—p. 468.

May 22, 1920, **36**, No. 21

*The Pituitary and Scleroderma. G. Izar.—p. 482.
Etiology of Lethargic Encephalitis. O. Palcani.—p. 486.
Primary Epithelioma of the Peritoneum. G. B. Farmachidis.—p. 489.
Chronic Intestinal Stasis. S. Menghetti.—p. 492.

The Pituitary and Scleroderma.—Izar advises in cases of scleroderma to investigate the functioning of the endocrine glands not only in the patient but in other members of the family, endeavoring thus to find which of them is below standard. In this way he deduced that the pituitary was primarily responsible for the scleroderma in a girl of 7, and his assumption was brilliantly confirmed by the rapid cure of the scleroderma under pituitary treatment and the persistence of the cure during the year to date. The sella turcica was rather larger than normal for the child's age, 7 mm. in height and 19 mm. in diameter.

Brazil Medico, Rio de Janeiro

May 4, 1920, **34**, No. 18

*The Conception of Cataphrenias. A. Austregesilo.—p. 277.
*Anthropometric Data with Brazilian Anemia. R. Kehl.—p. 280.
Insect Transmitting Mal de Caderas. E. von Bassewitz.—p. 283.

Cataphrenias.—Austregesilo applies this term to conditions which simulate dementia praecox but in which the condition gradually subsides as the nervous system regains tone. It may have a syphilitic origin or other cause, such as shell shock, and many cases labeled dementia praecox in which the recovery later has baffled the clinician, belong in this category. Insomnia, distaste for the ordinary duties of life, and dislike for other members of the family are among the earliest symptoms, with phobias, and lack of interest in the environment. This first phase merges into apathy, asthenia and mental confusion, or there may be delirium, hallucinations and false phobias. The improvement or complete cure in time refutes the diagnosis of dementia praecox.

Brazilian Anemia.—Kehl is in charge of one of the health stations recently organized in the system of Prophylaxia Rural, and here reports the physical data in regard to the people of the Merity district, showing the extremely low level of development and health.

Semana Médica, Buenos Aires

March 4, 1920, 27, No. 10

*Exploration of Liver Functioning. Tiburcio Padilla.—p. 319.
Psychophysiology of the Aviator. J. A. López.—p. 336. Cont'n.
*Function of Frontal Lobes. A. M. Sierra.—p. 338.
System of Public Hospitals and Charities in Ecuador, Colombia, Venezuela and Mexico. E. R. Coni.—p. 339.
The Emotion of the Infinite. M. Ruiz Maya.—p. 342.
The Puericulture Institute of the Paris Medical School. L. Mathé.—p. 345.
Hiccup. F. Daltabuit.—p. 346.

Tests of Liver Functioning.—Padilla reviews the whole field of tests to determine the functional capacity of the liver in its various directions, and the accepted interpretation of the findings.

Functions of the Frontal Lobes.—Sierra's patient was a physician with a chronic empyema in both frontal sinuses. The abscess pressed on the poles of both frontal lobes, but the only disturbance was in the use of the hands, the patient having forgotten completely what a fork, spoon, etc., are meant for. He could name them, but looked at them as a baby or a savage would who had never seen table utensils used. His impulse was to eat from the plate with his hands. In three weeks after the sinuses had been cleared out, the apraxia had entirely disappeared.

Siglo Médico, Madrid

May 1, 1920, 67, No. 3464

*Fractioned Analysis of Stomach Content. R. Sáenz de Santa María y Marron.—p. 321.
*Probable Identity of Hyperchlorhydria and Ulcer. González Campos.—p. 323. Concluded in No. 3466, p. 364.

May 8, 1920, 67, No. 3465

First Case of Ainhum Observed in Peru. O. Soto and J. L. Raffo.—p. 341.

May 15, 1920, 67, No. 3466

Case of Associated Scurvy and Beriberi. G. García Urdiales.—p. 361.

Fractioned Analysis of the Stomach Content.—Sáenz leaves the stomach tube in place for an hour or longer and examines the stomach content at intervals. He uses a tube 75 cm. long and 6 mm. in diameter, with a fenestrated olive that weighs 8 gm. The outer end of the tube lies between the teeth and the cheek, and the patient can read and talk. He aspirates the stomach content every fifteen minutes until no more can be obtained by aspiration with the subject on his back, side or in the knee-chest position. Between each aspiration he rinses the syringe and injects air. Acidity, fasting, of over 1 per thousand he regards as a sign of stomach disease. His experience confirms that gastric pain is due to exaggerated peristalsis rather than to hyperacidity. With gallstones, there is usually hyperacidity in the young, while in the elderly the tendency is to achylia or hypochylia, the stomach otherwise normal.

Identity of Hyperchlorhydria and Peptic Ulcer.—González argues that the clinical picture of hyperchlorhydria is probably from an already established ulcer. Fully 66.25 per cent. of dyspeptics in his experience in Spain have hyperchlorhydria. He noted hyperchlorhydria in 96.2 per cent. of 715 positive cases of gastric ulcer, only 2.09 per cent. having normal gastric chemistry. The acidity with ulcer need not be very high. An excess of acid does no harm with normal stomach walls; some solution of continuity is necessary before there can be corrosion. The pain from the ulcer is probably due to this corrosive action and not to excessive peristalsis. He has witnessed extreme peristalsis, during roentgenoscopy, without pain, while in other cases the pain was intense when this revealed no peristalsis. The fact that the treatment which cures ulcer cures also hyperchlorhydria is a still further argument in favor of their identity. He cites from the literature considerable data which, he thinks, sustain this view.

Deutsche medizinische Wochenschrift, Berlin

Jan. 29, 1920, 46, No. 5

The Sensation of Thirst. L. R. Müller.—p. 113.
*Azurophil Inclusion Bodies in Erythrocytes. G. Walterhöfer.—p. 116.
The Blood Picture Associated with Plasma Cells (Türk). Arneth.—p. 119.
Diverticulum of the Stomach. C. Nauwerck.—p. 119.
*Symptoms from Antirabies Treatment. A. H. Hübner.—p. 121.
*Pneumoperitoneum in Roentgenology of Liver. E. Rautenberg.—p. 123.
Traumatic Tuberculosis. A. Wolff-Eisner and L. Zahner.—p. 124.
*Relation of Hydrochloric Acid to Pepsin. L. Michaelis.—p. 126.
Otogenous Vertigo. A. Güttich.—p. 127.
Mercury Lamp plus Silver Nitrate in Dermatoses. K. Schindler.—p. 127.
Treatment of Furuncles. K. Weigert.—p. 128.
Syphilis and the General Practitioner. M. Joseph.—p. 130.

Azurophil Inclusion Bodies in Erythrocytes.—Walterhöfer states that the pathologic significance of inclusion bodies in erythrocytes lies not so much in the presence of the bodies within the cell structure as the fact that erythrocytes containing them appear in the peripheral circulation. No matter how much the shape and the staining properties of these inclusions may vary, they are always traceable to some reaction in the bone marrow, with exaggerated production of new red corpuscles. It is only in these new red blood cells that the azurophil inclusions are found. He remarks in conclusion that when the observer realizes that the different forms of these azurophil inclusions represent merely different stages of the process of extruding the nucleus of the erythrocyte, the ring bodies and dots are less bewildering. The ring bodies and dots display identical staining properties, and addition of an alkali facilitates the process. These inclusions occur more frequently than has hitherto been recognized. He describes in detail three cases of pernicious anemia in which they were found in large numbers and over long periods. The inclusions found in malaria and in various poisonings have nothing to do with these developmental processes of the red corpuscles; they originate in the corpuscles already in the blood stream. They are the direct expression of the effects of certain definite injuries, and aid in the diagnosis of the nature of the injuries.

Nervous and Psychic Disturbances Following Inoculation Against Rabies.—Hübner reports several cases in which physical and mental disturbances followed injection of antirabic serum. One man of 27 was bitten by a dog, and although there was no evidence of rabies, he received eighteen prophylactic injections of antirabic serum. The last day he received two injections, as he was leaving the city. On the journey home he felt formication in the right side of the face and six hours later right facial paralysis developed, and five days later, the same on the left side, with pains in the right ear. Opening the jaws was painful, and frontal and occipital headache was present and pain in the back at times, testifying to neuritis of the cerebral and certain peripheral nerves, with a certain amount of psychic disturbance. In three months he seemed to have quite recovered and had resumed work. Nothing else was known to explain the facial diplegia; rabies itself, Hübner thinks, can be definitely excluded in the case. In eight other cases he noted weakness and psychic changes after antirabies treatment. His experience thus warns that antirabies treatment is liable to temporarily incapacitate to some extent for regular work and responsibility.

Pneumoperitoneum in Roentgenology of the Liver.—Rautenberg discusses, in connection with seven cases, the liver defects that are revealed by raying after injection of air or oxygen into the abdominal cavity, comparing the clinical with the necropsy findings. As regards the indications for the pneumoperitoneum, he emphasizes that they are quite limited, and that the discomfort of the procedure for the patient must be weighed and compared with the expected gain from a diagnostic standpoint. It is not a question whether this method aids in the diagnosis, but whether we have exhausted all other clinical means of diagnosis, and what more can be reasonably expected from the pneumoperitoneum method.

The Relation of the Hydrochloric Acid of the Stomach to Pepsin.—Michaelis says that pepsin, in order to develop its highest degree of efficiency, must have a very high acidity to work in, irrespective as to whether this degree of acidity furnishes the most favorable conditions for the absorption of water by the protein to be digested. It is simply a wise provision of Nature that the optimal acidity for the action of pepsin coincides with the optimal conditions for water absorption by the ordinary food proteins.

Jahrbuch für Kinderheilkunde, Berlin

1920, **91**, No. 5

*Test Alimentary Glycemia. A. Frank and Lotte Mehlhorn.—p. 313.
*Chlorin Content of Infants' Blood Serum. K. Scheer.—p. 347.
*Pathogenesis and Treatment of Enuresis. A. Pese.—p. 357.
Congenital Atresia of the Duodenum. C. Ritter.—p. 369.

Alimentary Glycemia Test.—Frank and Mehlhorn report the results of thirty-seven different sets of tests on young children. In some of the tests 8 gm. of cane sugar per kilogram were given the child, fasting, and the blood was examined for sugar every half hour. Pronounced hyperglycemia followed in every instance and persisted for several hours. The same was noted with starch given in the same way, but casein and fat did not cause any change in the sugar content of the blood. With the sugar tests, there was always glycosuria, but not with starch. Starch seems to render the kidney filter less permeable for sugar.

The Chlorin Content of the Blood in Infants.—Scheer refers to the chlorin level in the serum and its dependence on the secretion of gastric juice. That is, during digestion the chlorin content of the serum rapidly declines, but rises again after the stomach is emptied.

Enuresis.—Pese says that enuresis nocturna seemed to become more prevalent during the war; at the children's asylum at Breslau 30 per cent. of all the small children and 10 per cent. of the older children were subject to it. He made a prolonged study of twenty-three small children and eleven older children, and became convinced that enuresis is of two types, the symptomatic, and the enuresis connected with the depth of the slumber. This latter form is characterized by its persistence from birth, with slight if any intermissions, the frequent coincidence with constipation, and the fact that therapeutic suggestion has no influence on it. Sedatives aggravate the enuresis, but it can be cured usually by waking the child at intervals before he gets too sound asleep, plus restriction of intake of fluids after midday. Symptomatic enuresis is amenable sooner or later to therapeutic suggestion, but this type may be combined with the "deep sleep type."

Münchener medizinische Wochenschrift, Munich

May 21, 1920, **67**, No. 21

Deep Roentgen-Ray Therapy in Gynecology. R. T. Von Jaschke and P. W. Siegel.—p. 593.
The Technic of Sacral Anesthesia. E. Zweifel.—p. 595.
Treatment of Severe Influenzal Pneumonia. Uffenheimer.—p. 597.
Agglutinoscopy of Bacterial Cultures. P. Kuhn.—p. 600.
Etiology and Diagnosis of Acute Bilateral Blindness. H. Hensen.—p. 601. Conclusion in No. 23, p. 637.
Sensibility of Digestive Tract in Man. L. Fischl.—p. 604.
Health Certificates for Marriage. Schubart.—p. 605.
Treatment of Old Luxations of Shoulder. A. Schanz.—p. 605.
Errors in Diagnosis and Treatment of Muscular Rheumatism. W. Smit.—p. 606.
*Toxicity of Arsphenamin. K. Taege.—p. 606.
Nature and Cause of Arteriosclerosis. W. Hueck.—p. 606. Begun in No. 19, p. 535.

Toxicity of Arsphenamin.—Taege reports a case in which 3.3 gm. of neo-arsphenamin were self-administered in large doses (0.6 to 0.9 gm.) in five days. The results were transient fever 104 F., rapid pulse, palpitation, sense of oppression, nausea, and vomiting (once only). Over the surface of the body, including soles of the feet and the palms of the hands, was a bright red eruption, with small spots, itching slightly. Taege recommended increased fluid intake and sweating procedures. The question is how the patient could bear such large quantities of arsphenamin without great harm resulting, whereas, in other cases, very much smaller quantities have had a serious or fatal effect. Does the body in disease react differently to arsphenamin than in health? Or is congenital hyposensibility to arsphenamin sometimes present, although its existence is usually denied? The patient in this case was a young physician whose assumption of syphilis following exposure proved later to be erroneous, so his self-dosing was superfluous.

Therapeutische Halbmonatshefte, Berlin

May, 1920, **34**, No. 9

Preventive Inoculations and Vaccine Therapy. H. Langer.—p. 253. Conclusion in No. 10.
The Physician Before the Law. W. Hanauer.—p. 259.

Wiener klinische Wochenschrift, Vienna

May 20, 1920, **33**, No. 21

Injections of Alcohol into the Gasserian Ganglion. H. Pichler.—p. 441. Conclusion in No. 22, p. 473.
Gasserectomy; Sixteen Cases. E. Ranzi.—p. 445.
Surgery and Roentgen Rays in Trigeminal Neuralgia. R. Lenk.—p. 446.
Lichen Trichophyticus. G. Riehl.—p. 448.
Proposed Changes in Medical Education. J. Meller.—p. 448.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

April 24, 1920, **1**, No. 17

Adaptation to Darkness. C. O. Roelofs and W. P. C. Zeeman.—p. 1422.
*Mucocele in Sphenoid Sinus. J. van der Hoeve.—p. 1431.
*High Blood Pressure and the Ambard Constant. J. Lankhout.—p. 1439.
Case of Pure Tetragenus Meningitis. M. van Riemsdijk.—p. 1445.

Mucocele of the Sphenoid Sinus.—Van der Hoeve tabulates the data of eight cases he has found on record and compares them with one personally observed. In the total nine cases one eye was blinded and in three other cases the other eye was threatened. The diagnosis had not been made before the operation in any case; the roentgen-ray findings are deceptive. Treatment can be only operative, best by way of the nose. Fluctuations in the fluid content of the mucocele were evidently responsible for the variability of the clinical picture. The data presented confirm the dictum that when vision is becoming impaired and no cause for this can be discovered, the nasal sinuses should be opened up. This may reveal a mucocele or empyema which otherwise may speedily entail blindness. In a recent case although a little pus was found in the nose, investigation, through the nose, of the nasal sinuses failed to disclose any focus, and the patient became blind in a few days from retrobulbar neuritis. Finally, opening the posterior sinus cavity revealed a large amount of pus on one side and a little on the other. This shows that even the rhinologist, with the aid of the roentgen rays, is not always able to detect sinus mischief without an exploratory opening up of the sinuses.

High Blood Pressure and the Ambard Constant.—Lankhout gives the details of age, blood pressure, urea content of the blood and the Ambard ureosecretory index in twelve cases, and emphasizes that a high blood pressure in itself is not usually a serious matter. The prognosis depends on the complications in kidneys, heart and nervous system, and we are unable to estimate these until they are quite pronounced. The Ambard constant does not help here. We have no grounds for the assumption that the high blood pressure is always secondary to heart, kidney or vascular disease. It has no more significance than the discovery of a murmur or hardening of a normally soft organ. Because we can measure the blood pressure, we have paid too much attention to it, and hidden our ignorance behind the term "essential hypertension." The rise in blood pressure is merely one element of a morbid series which has to be regarded as a whole.

Hospitalstidende, Copenhagen

April 21, 1920, **63**, No. 16

*The Duodenal Tube. A. Tvilstegaard.—p. 241. Conc'n in No. 17, p. 257.
*Gallstones and Achylia. F. Rydgaard.—p. 251.

The Duodenal Tube.—Summarized July 3, p. 72.

Cholelithiasis and Achylia.—Rydgaard reports a new instance of the connection between gallstone disease and achylia. Rovsing found the gallbladder full of stones in doing splenectomy on a woman of 65, but did not molest the gallbladder at the time. Test meal findings showed achylia or hypochylia. Four years later the gallbladder had been entirely destroyed functionally, but the gastric secretion was practically normal. This apparently contradicted Rovsing's assertions that achylia is almost inevitable when the cystic duct is totally obstructed. Necropsy revealed that the common bile duct had dilated until it had formed a new gallbladder. In a recent compilation of eighteen cases of total obstruction of the gallbladder in subjects under 50, Rydgaard found achylia or hypochylia in 83 per cent.; in 52 per cent. in thirty-two in which the cystic duct alone was impermeable, and in 27 per cent. in seven in which the gallbladder alone was shut off.